United States
Department of
Agriculture

Natural
Resources
Conservation
Service

In cooperation with Illinois
Agricultural Experiment
Station

Soil Survey of De Witt County, Illinois

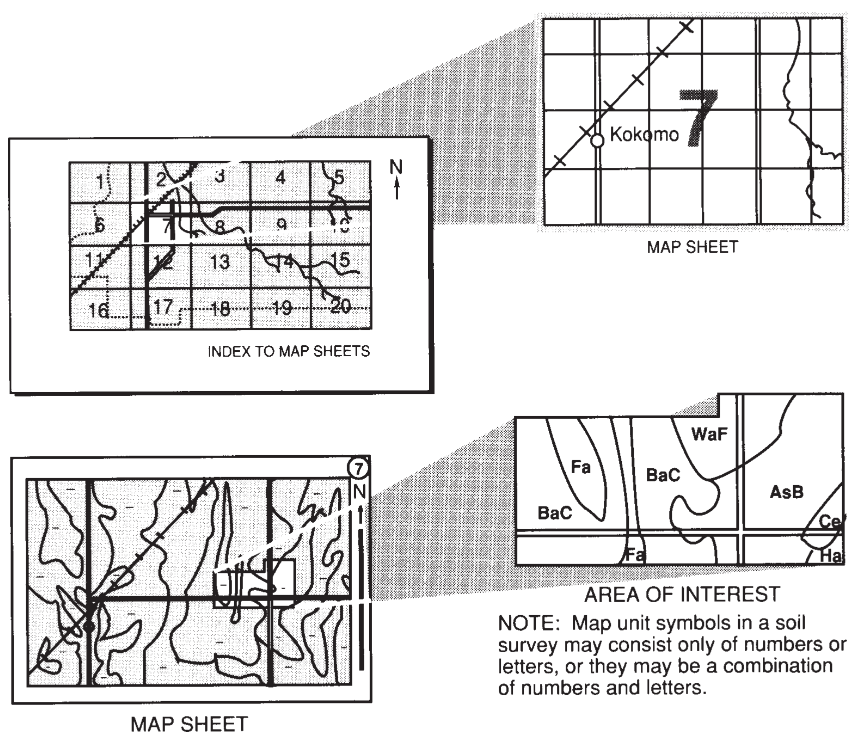
How To Use This Soil Survey

This publication consists of a manuscript and a set of soil maps. The information provided can be useful in planning the use and management of small areas.

To find information about your area of interest, locate that area on the **Index to Map Sheets**. Note the number of the map sheet and turn to that sheet.

Locate your area of interest on the map sheet. Note the map unit symbols that are in that area. Turn to the **Contents**, which lists the map units by symbol and name and shows the page where each map unit is described.

The **Contents** shows which table has data on a specific land use for each detailed soil map unit. Also see the **Contents** for sections of this publication that may address your specific needs.



National Cooperative Soil Survey

This soil survey is a publication of the National Cooperative Soil Survey, a joint effort of the United States Department of Agriculture and other Federal agencies, State agencies including the Agricultural Experiment Stations, and local agencies. The Natural Resources Conservation Service (formerly the Soil Conservation Service) has leadership for the Federal part of the National Cooperative Soil Survey. This survey was made cooperatively by the Natural Resources Conservation Service and the Illinois Agricultural Experiment Station. It is part of the technical assistance furnished to the De Witt County Soil and Water Conservation District. Additional funding was provided by the Illinois Department of Agriculture and the De Witt County Board.

Major fieldwork for this soil survey was completed in 2005. Soil names and descriptions were approved in 2005. Unless otherwise indicated, statements in this publication refer to conditions in the survey area in 2005. The most current official data are available on the Internet.

Nondiscrimination Statement

Cover Photo Caption

Soybeans growing in an area of Birkbeck, Buckhart, and Sable soils near the Clinton Power Plant.

Additional information about the Nation’s natural resources is available online from the Natural Resources Conservation Service at http://www.nrcs.usda.gov.

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Issued 2008

Numerical Index to Map Units

Foreword

Soil surveys contain information that affects land use planning in survey areas. They include predictions of soil behavior for selected land uses. The surveys highlight soil limitations, improvements needed to overcome the limitations, and the impact of selected land uses on the environment.

Soil surveys are designed for many different users. Farmers, foresters, and agronomists can use the surveys to evaluate the potential of the soil and the management needed for maximum food and fiber production. Planners, community officials, engineers, developers, builders, and home buyers can use the surveys to plan land use, select sites for construction, and identify special practices needed to ensure proper performance. Conservationists, teachers, students, and specialists in recreation, wildlife management, waste disposal, and pollution control can use the surveys to help them understand, protect, and enhance the environment.

Various land use regulations of Federal, State, and local governments may impose special restrictions on land use or land treatment. The information in this report is intended to identify soil properties that are used in making various land use or land treatment decisions. Statements made in this report are intended to help the land users identify and reduce the effects of soil limitations on various land uses. The landowner or user is responsible for identifying and complying with existing laws and regulations.

Great differences in soil properties can occur within short distances. Some soils are seasonally wet or subject to flooding. Some are too unstable to be used as a foundation for buildings or roads. Clayey or wet soils are poorly suited to use as septic tank absorption fields. A high water table makes a soil poorly suited to basements or underground installations.

These and many other soil properties that affect land use are described in this soil survey. The location of each map unit is shown on the detailed soil maps. Each soil in the survey area is described, and information on specific uses is given. Help in using this publication and additional information are available at the local office of the Natural Resources Conservation Service or the Cooperative Extension Service.

William J. Gradle
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Soil Survey of De Witt County, Illinois

By Troy A. Fehrenbacher, Natural Resources Conservation Service

Update fieldwork by Troy Fehrenbacher, Natural Resources Conservation Service

Original fieldwork by R.D. Windhorn and J. Steinkamp, Natural Resources Conservation Service, and T. Brooks, D. Leach, M. McNamara, D. Mueller, and G. Westphal, De Witt County

United States Department of Agriculture, Natural Resources Conservation Service, in cooperation with the Illinois Agricultural Experiment Station

De Witt County is in east-central Illinois (fig. 1). It has an area of 258,760 acres, or about 404 square miles. It is bordered on the north by McLean County, on the east by Piatt County, on the south by Macon County, and on the west by Logan County. In 2005, the population of De Witt County was estimated at 16,617. This estimate represents a decrease in population of about 1 percent between 2000 and 2005. In 2000, Clinton, the county seat and largest town in the county, had a population of 7,485 (U.S. Department of Commerce, 2006).

The survey area is a subset of Major Land Resource Areas (MLRAs) 108A, Illinois and Iowa Deep Loess and Drift, Eastern Part, and 108B, Illinois and Iowa Deep Loess and Drift, East-Central Part (USDA/NRCS, 2006).

This survey updates the survey of De Witt County published in 1991 (Windhorn, 1991). It has larger maps that show the soils in more detail. Some of the information from the 1991 survey has been incorporated in this publication without alteration.

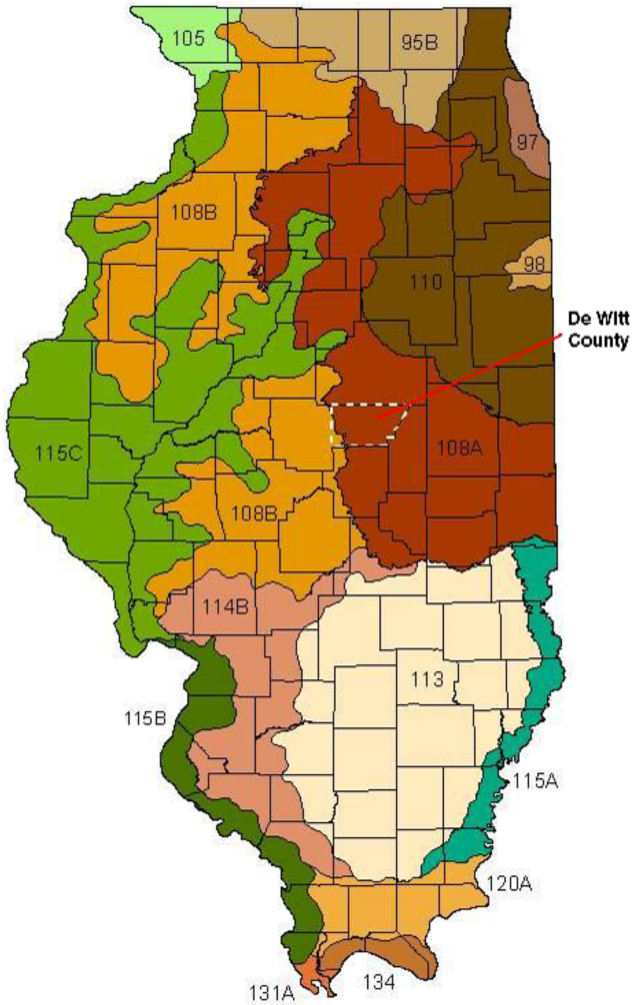
General Nature of the County

This section provides general information about De Witt County. It describes history and development; physiography, relief, and drainage; natural resources; and climate.

History and Development

Evidence suggests that Indians known as Mound Builders were among the first people to inhabit what is now De Witt County (Anonymous, 1882). The Kickapoo and Potawatomi Indians inhabited the survey area just prior to the arrival of the first white settlers (Anonymous, 1882; Clinton and De Witt County History Book Committee, 1985). As late as 1818, the Kickapoo Tribe numbered about 1,600 in this area. By the time the settlers arrived a few years later, however, the majority of the Indians had moved westward across the Mississippi River.

The first European settlers arrived in 1824. They camped along Salt Creek, northwest of the present town of Kenney. These early settlers often used the creeks for fishing and travel lanes. They also favored the timbered areas because of the



LEGEND

95B—Southern Wisconsin and Northern Illinois Drift Plain
97—Southwestern Michigan Fruit and Truck Crop Belt
98—Southern Michigan and Northern Indiana Drift Plain
105—Northern Mississippi Valley Loess Hills
108A and 108B—Illinois and Iowa Deep Loess and Drift
110—Northern Illinois and Indiana Heavy Till Plain
113—Central Claypan Areas
114B—Southern Illinois and Indiana Thin Loess and Till Plain, Western Part
115A, 115B, and 115C—Central Mississippi Valley Wooded Slopes
120A—Kentucky and Indiana Sandstone and Shale Hills and Valleys, Southern Part
131A—Southern Mississippi River Alluvium
134—Southern Mississippi Valley Loess

Figure 1.—Location of De Witt County and the major land resource areas (MLRAs) in Illinois.

availability of firewood, the abundance of game, the danger of prairie fires, and the belief that the prairies were generally infertile and unproductive (Clinton and De Witt County History Book Committee, 1985).

In 1826, a second settlement was established around the present location of Waynesville, near Kickapoo Creek. This settlement became the first town in the county.

The first settlement around Clinton was on a site about 1 mile west of the present town.

Created from portions of McLean and Macon Counties, De Witt County officially became a separate county in 1839. The county was named for De Witt Clinton, Governor of New York. The town of Clinton was platted in 1835 and became the county seat in May of 1839 (Clinton and De Witt County History Book Committee, 1985).

The arrival of the railroad industry in 1854 added a much-needed overland transportation system to De Witt County and all of central Illinois. After the advent of the railroad, the population increased and farming became a much larger part of the local economy (Clinton and De Witt County History Book Committee, 1985).

The town of Clinton has several large factories that manufacture a wide variety of products or provide services for the surrounding area. The largest employer in the area is the nuclear power plant at Clinton Lake (City of Clinton, Illinois, 2006).

Agriculture is the leading industry in De Witt County. In 2002, there were 459 farms on 202,699 acres. Farms averaged about 442 acres in size. Corn and soybeans are the main crops. Forage crops, wheat, silage, and oats also are produced (USDA, National Agricultural Statistics Service, 2006; Illinois Agricultural Statistics Service, 2006).

De Witt County has a well developed system of roads. Federal and State highways that cross the county include Interstates 72 and 74, U.S. Highways 51 and 150, and State Highways 10, 48, and 54. One railroad line and numerous paved county and township roads also provide important transportation links.

Physiography, Relief, and Drainage

De Witt County is mostly within the Bloomington Ridged Plain of the Central Lowland physiographic province. The Bloomington Ridged Plain is part of the Wisconsinan till plain that is characterized by a series of end moraines and ground moraines. The southwest corner of De Witt County is within the Springfield Plain of the Central Lowland physiographic province. The Springfield Plain includes the level part of the Illinoian drift-sheet in central and southern Illinois. It is distinguished mainly by its flatness and shallow entrenchment of drainage (Leighton and others, 1948).

During the Pleistocene, glaciers covered De Witt County. The physiography in De Witt County is a result of the glacial ice, glacial meltwater, and wind passing over the landscape during the two most recent glacial episodes, the Wisconsinan and the Illinoian (Piskin and Bergstrom, 1975). The glaciers deposited drift ranging about 50 feet to more than 400 feet thick throughout the county. Over most of the county, this drift material is covered by 4 to 12 feet of loess, mainly windblown silt with small amounts of windblown sand. It is in these loess deposits that modern soil development has taken place (Hunt and Kempton, 1977).

During the Illinoian Episode, glaciers deposited till ranging from several feet to more than 100 feet thick over Pennsylvanian sandstone, shale, and limestone throughout the county. The till is known as the Radnor Till Member of the Glasford Formation.

During the most recent Wisconsinan Episode, glaciers again crossed over the county. They deposited till as they advanced and outwash as they retreated. The till deposited during this episode in De Witt County is known as the Tiskilwa Formation, and the outwash is known as the Henry Formation.

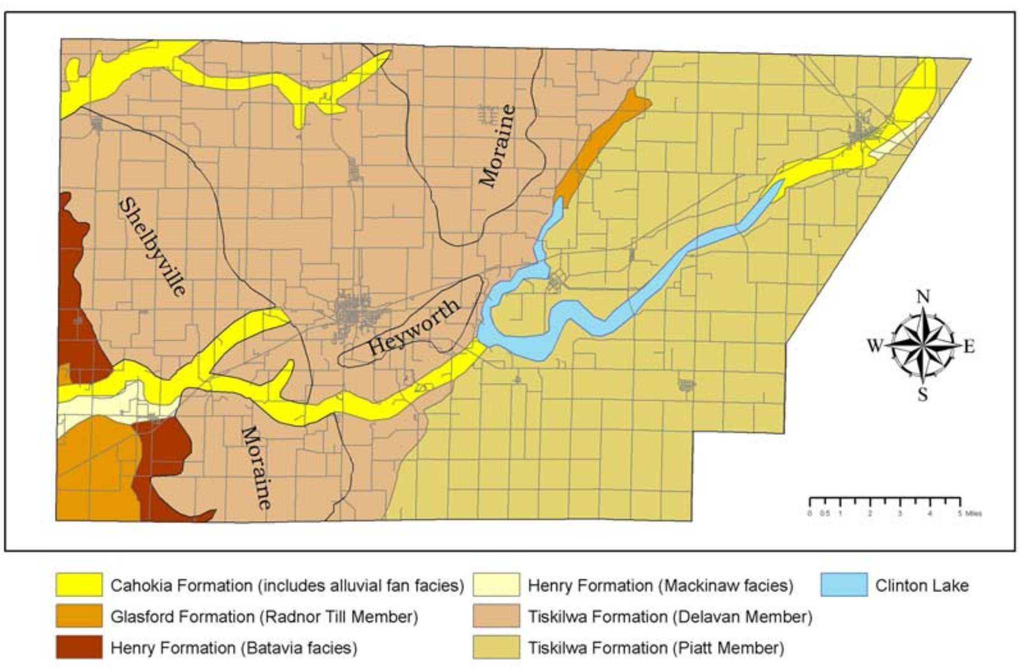
The Tiskilwa Formation is the oldest and lowermost diamicton unit of the Wisconsinan Episode. The formation is divided into the Delavan and Piatt Members. The Delavan Member, formerly classified as Fairgrange Till, consists of calcareous, brown gray loam diamicton that contains lenses of gravel, sand, silt, or clay. The Piatt Member consists of gray loam diamicton containing lenses of sorted sediment. It is sandier, grayer, and more illitic than the underlying Delavan Member.

The Henry Formation is glacial outwash, predominantly sand and gravel, that occurs above the Sangamon geosol and is either at or near the surface or overlain by loess (Willman and Frye, 1970). The Batavia facies of the Henry Formation is characterized by upland outwash plains that form a skirt, 1 to 3 miles wide, all along the leading edge of the terminal moraine of the Wisconsinan Episode (Hansel and Johnson, 1996). This outwash consists of fine sand to medium gravel deposited by meltwater of the late Wisconsinan Episode (Hunt and Kempton, 1977). The Mackinaw facies of the Henry Formation is characterized by sand and gravel valley train sediments deposited predominantly during the late Wisconsinan Episode meltout. This outwash is generally more uniform in texture than that of the Batavia facies (Hansel and Johnson, 1996).

The Cahokia Formation consists mainly of poorly sorted silt, clay, and sand. Its thickness varies greatly, but it typically does not exceed 50 feet. The surface of the formation generally is the surface of the flood plain and the modern soil. In places, this formation is overlain by windblown sand, loess, or colluvium from side slopes (Willman and others, 1975).

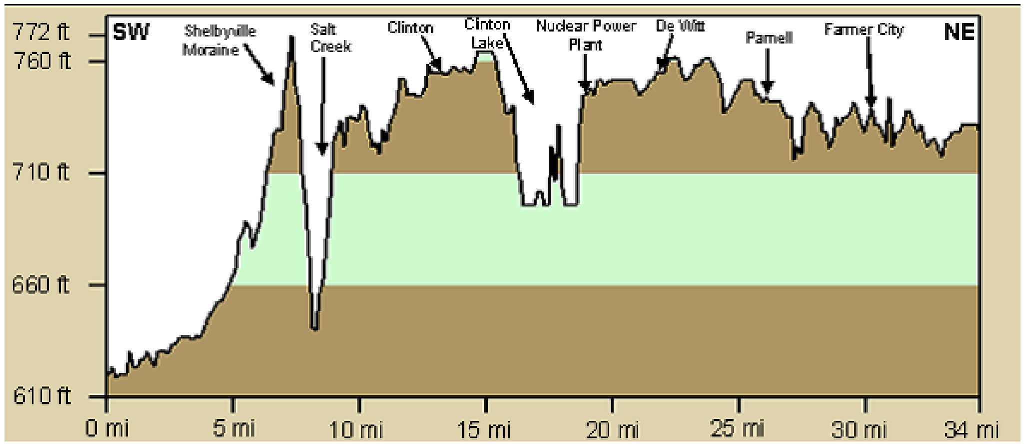
The Shelbyville Moraine is the most noticeable physiographic surface feature in the county. This moraine extends diagonally from southeast to northwest across the southwest corner of the county and marks the farthest advance of the Wisconsinan glaciation. All of the glacial deposits west and south of the Shelbyville Morainic System are of the older Illinoian age (fig. 2).

The relief in De Witt County is low in the nearly level and gently sloping uplands. The greatest change in relief occurs in areas along major drainageways where stream downcutting has caused 75- to 100-foot drops in elevation from the adjacent uplands (fig. 3). The elevation in the county ranges from about 605 feet to about 810 feet above mean sea level. The highest elevation is on the Heyworth Moraine in the north-central part of the county. The lowest elevation is at the point where Salt Creek leaves the county.



Sources: Data layers modified by USDA-NRCS from IDNR-IGIS 2-volume set of Digital Data of Illinois (1996). Quaternary deposit information based on ISGS 1984 digital representation of Quaternary Deposits of Illinois map by Lineback (1979). Formations renamed based on ISGS Bulletin 104: Wedron and Mason Groups, by Hansel and Johnson (1996).

Figure 2.—Quaternary geology in De Witt County, Illinois.



Source: 3-D TopoQuads Copyright ©1999 DeLorme Yarmouth, ME 04096; Datum NAD27

Figure 3.—Elevation cross-section of De Witt County, Illinois, from the southwest to the northeast.

There are two main drainage systems within De Witt County, both of which ultimately drain into the Illinois River. The largest and main system is composed of Salt Creek (fig. 4) and North Fork and their tributaries. These drainageways drain all of the eastern, central, and northeastern parts of the county. The system extends from the northeast corner of the county to the southwestern part. The other system is composed of Kickapoo Creek and its tributaries. This drainage system drains the northwestern part of the county and extends diagonally across the northwest corner. Surface water in some areas of the southern and southeastern parts of the county drains southward without entering either of the two main drainage systems. This water eventually enters the Sangamon River, which is outside the county boundaries.

The flood plains along these drainageways and their tributaries generally are flooded annually, and many of the soils in these areas have a seasonal high water table.

Natural Resources

At the time of settlement, about 50,000 acres of the county was forestland (Iverson and others, 1989). In 2000, about 8,500 acres, or about 3 percent of the county, was forestland (Illinois Department of Agriculture, 2006). Much of the forestland is along the major streams and their tributaries. Much of this land is not tillable because the slopes are too steep. In addition to its timber value, forestland provides important wildlife habitat, watershed protection, and recreation areas. Deer, turkey, squirrel, raccoon, songbirds, and other wildlife inhabit these areas.

The county has approximately 5,500 acres of impounded water. Clinton Lake, the largest single impoundment, is a cooling lake for the Clinton Power Station and makes up about 4,900 acres of this total. Weldon Springs Lake (29 acres) is in the Weldon Springs State Recreation Area. Bluegill, largemouth bass, smallmouth bass, hybrid striped bass, pure striped bass, white bass, catfish, crappie, and walleye are the dominant sport fish species in these lakes (Illinois Department of Natural Resources, 2006). The majority of the remaining impounded water within the county consists of farm ponds, cooling ponds for the power plant, settling ponds, and wastewater treatment ponds.

The county has an abundant supply of ground water in the sand and gravel deposits in the fill of river valleys, in buried valleys, and in areas where till is thick. Several communities in the county obtain their water from water supply wells. For example, the

Figure 4.—Lawson soils provide excellent woodland wildlife habitat along the banks of Salt Creek.

city of Clinton obtains its water from six community water supply wells that supply an average of 873,000 gallons per day (gpd) to a population of 7,800. Farmer City has four wells that supply an average of 257,000 gpd to a population of 2,450; the village of Wapella has two wells that supply an average of 67,000 gpd to a population of 610; the village of Weldon has three wells that supply an average of 39,000 gpd to a population of 450; the village of Waynesville has two wells that supply an average of 27,000 gpd to a population of 510; and the village of Kenney has one well that supplies an average of 33,800 gpd to a population of 400. Rural residents either are served by wells from these communities or depend on private ground-water wells (Illinois Environmental Protection Agency, 2006).

De Witt County produces very little sand and gravel. Excavations for sand and gravel are identified on the soil maps as map unit 865 (Pits, gravel).

It is estimated that De Witt County has almost 1.5 billion tons of coal reserves. Because of the thickness of the overburden and the fact that the coal beds are not thick, mining for coal has never occurred in the county. Little oil production takes place within the county. Oil resources are confined to areas near Wapella and Parnell. Some drift-gas wells supply enough natural gas for home use. Most of these wells are along the Shelbyville Moraine in the western part of the county (Hunt and Kempton, 1977).

Climate

Table 1 gives data on temperature and precipitation for the survey area as recorded at Decatur in the period 1971 to 2000. Table 2 shows probable dates of the first freeze in fall and the last freeze in spring. Table 3 provides data on the length of the growing season.

In winter, the average temperature is 29.4 degrees F and the average daily minimum temperature is 20.7 degrees. The lowest temperature on record, which occurred at Decatur on February 13, 1905, is -25 degrees. In summer, the average temperature is 74.3 degrees and the average daily maximum temperature is 86.0 degrees. The highest temperature, which occurred at Decatur on July 14, 1954, is 113 degrees.

Growing degree days are shown in table 1. They are equivalent to “heat units.” During the month, growing degree days accumulate by the amount that the average temperature each day exceeds a base temperature (50 degrees F). The normal monthly accumulation is used to schedule single or successive plantings of a crop between the last freeze in spring and the first freeze in fall.

The average annual total precipitation is 39.68 inches. Of this total, 23.6 inches, or about 59 percent, usually falls in April through September. The growing season for most crops falls within this period. The heaviest 1-day rainfall during the period of record was 5.11 inches at Decatur on July 26, 1992. Thunderstorms occur on about 46 days each year, and most occur in July.

The average seasonal snowfall is 21.5 inches. The greatest snow depth at any one time during the period of record was 22 inches recorded on December 20, 1973. On an average, 30 days per year have at least 1 inch of snow on the ground. The heaviest 1-day snowfall on record was 13.5 inches recorded on March 19, 1906.

The average relative humidity in midafternoon is about 61 percent. Humidity is higher at night, and the average at dawn is about 84 percent. The sun shines 70 percent of the time possible in summer and 48 percent in winter. The prevailing wind is from the south. Average windspeed is highest, 13 miles per hour, in March.

How This Survey Was Made

Land resource regions (LRRs) and their component major land resource areas (MLRAs) serve as a basis for making decisions about national and regional agricultural and natural resources concerns. These land categories group geographical areas that are characterized by a particular pattern of soils, climate, water resources, and land use. Major land resource areas are geographically associated land resource units that share a common land use, elevation, topography, climate, water, soils, and potential natural vegetation (USDA/NRCS, 2006). De Witt County is in the Central Feed Grains and Livestock Land Resource Region and in MLRAs 108A, Illinois and Iowa Deep Loess and Drift, Eastern Part, and 108B, Illinois and Iowa Deep Loess and Drift, East-Central Part (fig. 1).

Soil surveys are updated as part of maintenance projects that are conducted for an MLRA or other region. Maintaining and coordinating soil survey information within a broad area result in uniformly delineated and joined soil maps and in coordinated interpretations and map unit descriptions for areas within each MLRA.

Updated soil survey information is coordinated within the MLRA or other region and meets the standards established and defined in the memorandum of understanding. Soil surveys that are consistent and uniform within a broad area enable the coordination of soil management recommendations and a uniform program application of soil information.

The current survey was made to provide updated information about the soils and miscellaneous areas in De Witt County. Map unit design and the detailed soil map unit descriptions are based on the occurrence of each soil throughout the MLRA. The information in this survey includes a description of the soils and miscellaneous areas and their location and a discussion of their suitability, limitations, and management for specified uses.

Soil scientists observed the steepness, length, and shape of the slopes; the general pattern of drainage; and the kinds of crops and native plants. They studied the soil

profile, which is the sequence of natural layers, or horizons, in a soil. The profile extends from the surface down into the unconsolidated material in which the soil formed. The unconsolidated material is devoid of roots and other living organisms and has not been changed by other biological activity.

The soils and miscellaneous areas in the survey area are in an orderly pattern that is related to the geology, landforms, relief, climate, and natural vegetation of the area. Each kind of soil and miscellaneous area is associated with a particular kind of landform or with a segment of the landform. By observing the soils and miscellaneous areas in the survey area and relating their position to specific segments of the landform, a soil scientist develops a concept, or model, of how they were formed. Thus, during mapping, this model enables the soil scientist to predict with a considerable degree of accuracy the kind of soil or miscellaneous area at a specific location on the landform.

Commonly, individual soils on the landscape merge into one another as their characteristics gradually change. To construct an accurate soil map, however, soil scientists must determine the boundaries between the soils. They can observe only a limited number of soil profiles. Nevertheless, these observations, supplemented by an understanding of the soil-vegetation-landscape relationship, are sufficient to verify predictions of the kinds of soil in an area and to determine the boundaries.

Soil scientists recorded the characteristics of the soil profiles that they studied. They noted soil color, texture, size and shape of soil aggregates, kind and amount of rock fragments, distribution of plant roots, reaction, and other features that enable them to identify soils. After describing the soils in the survey area and determining their properties, the soil scientists assigned the soils to taxonomic classes (units). Taxonomic classes are concepts. Each taxonomic class has a set of soil characteristics with precisely defined limits. The classes are used as a basis for comparison to classify soils systematically. Soil taxonomy, the system of taxonomic classification used in the United States, is based mainly on the kind and character of soil properties and the arrangement of horizons within the profile. After the soil scientists classified and named the soils in the survey area, they compared the individual soils with similar soils in the same taxonomic class in other areas so that they could confirm data and assemble additional data based on experience and research.

While a soil survey is in progress, samples of some of the soils in the area generally are collected for laboratory analyses and for engineering tests. Soil scientists interpret the data from these analyses and tests as well as the field-observed characteristics and the soil properties to determine the expected behavior of the soils under different uses. Interpretations for all of the soils are field tested through observation of the soils in different uses and under different levels of management. Some interpretations are modified to fit local conditions, and some new interpretations are developed to meet local needs. Data are assembled from other sources, such as research information, production records, and field experience of specialists. For example, data on crop yields under defined levels of management are assembled from farm records and from field or plot experiments on the same kinds of soil.

Predictions about soil behavior are based not only on soil properties but also on such variables as climate and biological activity. Soil conditions are predictable over long periods of time, but they are not predictable from year to year. For example, soil scientists can predict with a fairly high degree of accuracy that a given soil will have a high water table within certain depths in most years, but they cannot predict that a high water table will always be at a specific level in the soil on a specific date.

The soil survey information in this report was based on a review of field notes, laboratory data, and other data collected during the previous soil survey of De Witt County (Windhorn, 1991). In addition, data from other soil surveys within MLRA 108 were reviewed, and selected soils were resampled to a greater depth than in previous

surveys. Reviewing data on a regional basis results in improved consistency in the identification and classification of soils on similar landscapes and in more consistent interpretation of soil properties.

Aerial photographs used in this survey were taken in 1998 and 2001. Soil scientists also studied U.S. Geological Survey topographic maps and orthophotographs to relate land and image features. Specific soil boundaries were drawn on the orthophotographs. Adjustments of soil boundary lines were made to coincide with the U.S. Geological Survey topographic map contour lines and tonal patterns on aerial photographs.

Formation and Classification of the Soils

This section relates the soils in the survey area to the major factors of soil formation and describes the system of soil classification.

Formation of the Soils

Soil is produced by soil-forming processes acting on materials deposited or accumulated by geologic agents. The characteristics of the soil are determined by (1) the physical and mineralogical composition of the parent material; (2) the climate under which the soil formed; (3) the plant and animal life on and in the soil; (4) the relief, or lay of the land; and (5) the length of time the forces of soil formation have acted on the parent material (Jenny, 1941).

Climate and plant and animal life are the active factors of soil formation. These factors act directly on the parent material, either in place or after it has been relocated by water, glaciers, or the wind, and slowly change it to a natural body that has genetically related layers, or horizons. Relief can modify the effects of climate and plant and animal life. In sloping areas, for example, erosion can inhibit the processes of soil formation. Wetness can slow these processes in level or depressional areas. The parent material also affects the kind of soil profile that is formed. Finally, time is needed for changing the parent material into a soil profile that has clearly differentiated horizons.

The factors of soil formation are so closely interrelated in their effects on the soil that few generalizations can be made regarding the effects of any one factor unless the effects of the other factors are known. Many of the processes of soil formation are unknown.

Parent Material

Parent material is the unconsolidated organic and mineral material in which a soil forms. It determines the chemical and mineralogical composition of the soil. Most of the parent material in De Witt County is a direct result of the glaciers and sediments of the Wisconsinan Episode. A small part of the southwest corner of the county shows the influence of the Illinoian Episode. Both the Wisconsinan and Illinoian Episodes are of the Pleistocene Epoch (Willman and Frye, 1970). Although the kinds of parent material are associated with glacial deposits, the properties vary greatly, mostly because of varying modes of deposition. The dominant kinds of parent material in De Witt County are till, loess (fig. 5), outwash, alluvium, and colluvial sediments. These materials were deposited by wind, water, glaciers, or glacial meltwater. In some areas the materials have been reworked by wind or water after deposition. Many of the soils formed in more than one kind of parent material. For example, some of the soils in De Witt County formed in loess and in the underlying till (fig. 6).

Till is material laid down directly by glaciers with a minimum of water action. It consists of clay, silt, sand, rock fragments, and boulders, all of which are mixed together. The rock fragments have distinct edges and corners, indicating that they have not been subject to intensive abrasion by flowing water. Unweathered till is generally calcareous and very dense. Through processes of weathering and soil

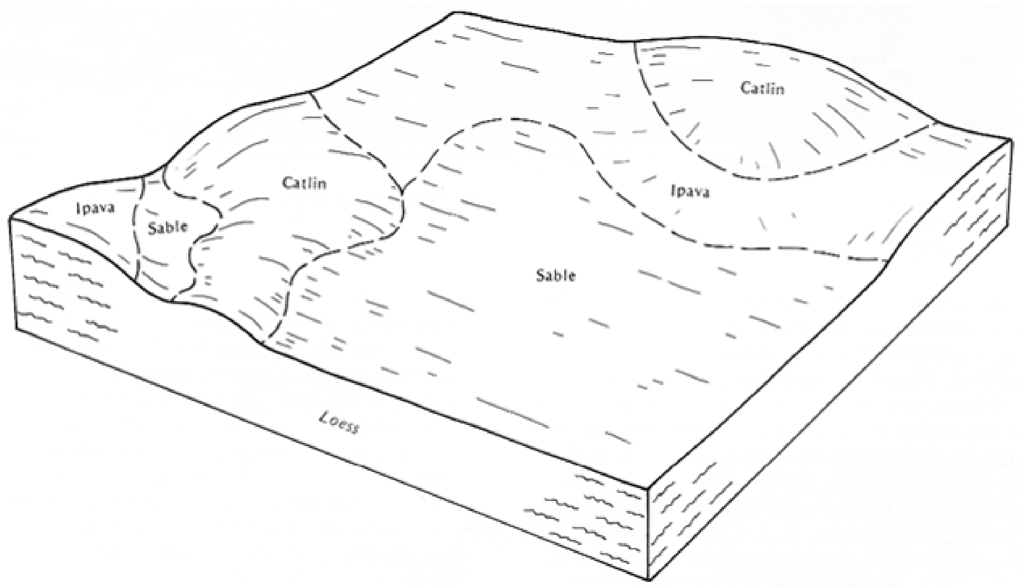


Figure 5.—Typical relationship of soils and landscape in the less dissected parts of De Witt County, Illinois.

formation, calcium carbonate is leached from till and the material becomes more acidic and less dense. The well drained Senachwine soils have till within 18 inches of the soil surface (fig. 7).

Most till in De Witt County was deposited during the Woodfordian Substage of the Wisconsinan Episode, the most recent glaciation to reach Illinois (Willman and Frye, 1970). This deposition occurred between 22,000 and 12,500 years ago. The surficial till deposits in the eastern half of the county are part of the Piatt Member of the Tiskilwa Formation. Most of the deposits in the western half of the county are part of the Delavan Member of the Tiskilwa Formation; the Shelbyville Moraine is included in this area. The Batavia facies of the Henry Formation lies along the western edge of the Shelbyville Moraine. The Cahokia Formation is along major drainageways, and the Mackinaw facies of the Henry Formation follows Salt Creek from the Shelbyville Moraine to the point where it exits the county at the southwestern edge. The Radnor Member of the Glasford Formation occupies the extreme southwest corner of the county. It was deposited during the Illinoian Episode (Hansel and Johnson, 1996).

Loess is material transported and deposited by wind. It consists of uniform, dominantly silt-sized particles that were typically calcareous before being acted upon by soil-forming factors. The meltwaters from the glaciers carried vast quantities of silt, which were deposited in the major river valleys. As these sediments were exposed when the meltwaters subsided, the winds carried the silts and deposited them over much of the land. Most of the soils in the county formed at least partially in loess. The thickness of the loess ranges greatly, from virtually none in areas where slopes are very steep to about 4 to 12 feet in the nearly level areas on uplands. Ipava and Sable soils are examples of soils that formed in more than 80 inches of loess. Catlin and Dana soils are examples of soils that formed in varying thicknesses of loess and in the underlying till (fig. 8). Senachwine and Wyanet soils are examples of soils that formed in little or no loess and in the underlying till. These materials are identified on geology maps as the Delavan Member and Piatt Member of the Tiskilwa Formation (Hansel and Johnson, 1996).

Outwash is stratified material deposited by flowing glacial meltwaters. The size of the particles that constitute outwash varies, depending on the velocity of the moving

water. Outwash is typically dominated by material that is fine sand or coarser. The coarser material was deposited nearer to the ice or in rapidly moving glacial meltwater streams. Most of the outwash deposits were later covered by loess. Areas of outwash in De Witt County occur on stream terraces and on a large outwash plain that lies in front of the Shelbyville Moraine (fig. 9). The larger areas of these materials are identified on geology maps as the Batavia facies and Mackinaw facies of the Henry Formation (Hansel and Johnson, 1996). Elburn, Plano, and St. Charles soils are examples of soils that formed in outwash.

Alluvium is material that was deposited by floodwater from modern streams. On geology maps, the larger areas of alluvial material are identified as the Cahokia Formation (Hansel and Johnson, 1996). Soils that formed in alluvium are generally stratified in both color and texture. The alluvial soils consist mostly of silty sediments, but in some places the soils have thin layers of loamy and sandy material. Lawson and Sawmill soils formed in silty alluvium and have weakly developed horizons. Ross soils formed in loamy sediments. The largest areas of alluvial soils are along Salt Creek, North Fork, and Kickapoo Creek and their tributaries.

Colluvium is similar in composition to alluvium, but colluvium was deposited by gravity at the base of slopes or by slopewash into closed depressions. The material is silty or clayey and is generally dark in prairie areas. Peotone soils formed in colluvium.

Climate

De Witt County has a temperate, humid, continental climate; the climate is uniform throughout the county. Climatic differences within the county are too small to have

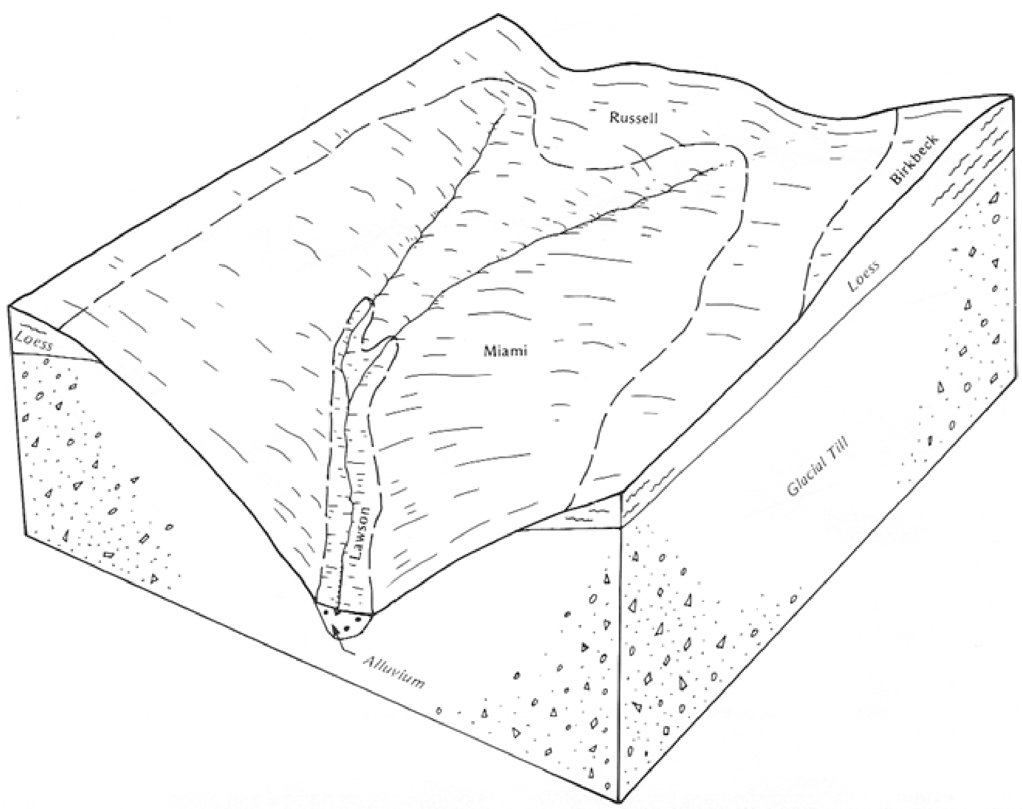


Figure 6.—Typical relationship of soils and landscape in dissected parts of De Witt County, Illinois.

Figure 7.—Woodland in an area of Senachwine soils provides wildlife habitat, recreational opportunities, and firewood for land owners in De Witt County.

caused significant differences among the soils. In some areas of the county, however, the effects of climate are modified locally by relief. The influence of climate becomes more obvious when comparisons are made on a broad regional basis.

Climate affects soil formation through its influence on weathering, plant and animal life, and erosion. Water from rain and melting snow seeps slowly downward through the soil and allows physical and chemical reactions to take place in the parent material. Where water can move downward, it carries clay and dissolved minerals from the surface soil into the subsoil. In soils having limy parent materials, leaching often removes calcium carbonates to a depth of 40 inches or more. As a result, these soils are neutral to strongly acid. This acidity promotes other pedogenic processes, such as the biochemical breakdown of minerals and the translocation of clays.

Soil temperature affects soil formation. When soil is frozen, for example, many of the processes of soil formation are slowed or halted. Conversely, warm soil temperatures encourage the microbial metabolism of soil organic matter, the downward translocation of clays, and other processes.

Climate also influences the kind and extent of plant and animal life. The climate in De Witt County has favored tall prairie grasses and deciduous hardwoods. It also has favored the decomposition of dead plants and animals, which provides humus to the soil.

Heavy, untimely rains are destructive when they fall on soils that are bare of vegetation. The raindrops disperse the soil particles, thereby contributing to erosion and the formation of crusts. Early spring rains in these areas can cause extensive erosion when the soils are partially frozen because reduced infiltration results in more water running off the surface.

Plant and Animal Life

Soils are greatly affected by the type of vegetation under which they formed. The chief contribution of vegetation and biological processes to soil formation is the addition of organic material and nitrogen to the soil. The amount of organic material in the soil depends primarily on the kind of native plants that grew there. Decayed remains of plants on or below the surface eventually become organic matter, or humus. Roots of the plants provide channels for the downward movement of water through the soil and add organic matter as they decay.

The native vegetation in De Witt County since the Wisconsinan Stage has consisted primarily of tall prairie grasses and, to a lesser extent, deciduous hardwoods. At the time of early settlement, about 81 percent of the county supported prairie vegetation (Iverson and others, 1989). These grasses have many fibrous roots that contribute large amounts of organic matter to the soil, especially where they are concentrated near the surface. Soils that formed under prairie vegetation commonly have a thick, black or dark brown surface layer. They generally are in areas of low relief that are relatively undissected by drainageways. Catlin, Ipava, and Sable soils are examples.

About 19 percent of De Witt County supported forest vegetation at the time of early settlement (Iverson and others, 1989). Because the root systems of deciduous hardwoods are less fibrous and concentrated more at the surface than those of grasses, the contribution of organic matter to the soil occurs mainly in the form of leaf litter. Consequently, soils that formed under forest vegetation have a thinner and lighter colored surface layer than that of prairie soils. Birkbeck, Russell, and Senachwine soils formed under forest vegetation. They are on summits and on backslopes along drainageways.

Micro-organisms, earthworms, insects, and burrowing animals also have affected soil formation. Bacteria and fungi help to decompose plant and animal remains and change them into humus. Burrowing animals, such as earthworms, cicadas, and

Figure 8.—The thickness of the loess in De Witt County can range from 60 inches in areas of Catlin soils to as little as 22 inches in areas of Dana soils on the rolling farmland along the Shelbyville Moraine.

Figure 9.—The nearly level and level Elburn and Sable soils on an outwash plain in front of the Shelbyville Moraine. These soils are among the most productive soils in the county.

ground squirrels, help to incorporate humus into the soil while creating small channels that influence soil aeration and the percolation of water. Humus is very important in the formation of soil structure and good tilth.

Human activities, such as tillage, installing subsurface drains, building levees for flood protection, construction, and the clearing of native forests, have significantly altered the nature of the existing plant and animal communities. These activities have also contributed to the loss of soil material and organic material through accelerated erosion.

Relief

Relief (local changes in elevation) has markedly affected the soils in De Witt County by influencing runoff, erosion, deposition, and natural drainage. Relief includes such landform characteristics as position on the landform, slope gradient, slope shape, and slope aspect.

Variations in relief in the county reflect a variety of landforms. The most extensive landforms in the county are end moraines, ground moraines, stream terraces, lake plains, and flood plains.

The presence of two end moraines in De Witt County represents successive advances and retreats of the glacial ice front. The end moraines have a variety of slope classes, commonly ranging from gently sloping to very steep. The Heyworth Moraine occurs in the central and northern parts of the county. The Shelbyville Moraine is in the southwest corner of the county. It represents the termination of the

Wisconsinan glaciation. Catlin and Wyanet soils are examples of soils on the end moraines in the county.

Ground moraines of the Wisconsinan Stage, which occur between end moraines and the terminal moraine, generally consist of broad, nearly level and gently sloping interfluves. The relief on ground moraines is less variable than the relief on end moraines and along tributaries of major streams and rivers, and the loess deposits are thicker. These areas are dominated by such soils as Buckhart, Ipava, and Sable soils. Where the ground moraine is incised by tributaries of major streams and rivers, Miami, Senachwine, Lawson, and Sawmill soils are among the prevalent soils.

Stream terraces occur primarily along Salt Creek, North Fork, and Kickapoo Creek and their tributaries. They are generally nearly level and gently sloping areas that lie above adjacent flood plains. Camden, Plano, and St. Charles soils are examples of soils that occur on stream terraces in the county.

Where the parent material is relatively uniform, differences in natural drainage are closely related to landform position, such as summit or footslope, and to slope gradient and shape. Elburn and Plano soils, for example, both formed in loess and in the underlying outwash. Elburn soils are on nearly level summits or concave footslopes and are somewhat poorly drained. The water in the saturated soil pores restricts the circulation of air in the soil. Under these conditions, naturally occurring iron and manganese compounds are chemically reduced. The reduced form of iron and manganese is more soluble than the oxidized form and can be leached readily from the soil, leaving the subsoil with a grayish color. Plano soils, conversely, are on gently sloping summits and are well drained. Because the water table is lower in the Plano soils and some of the rainfall runs off the sloping surface instead of infiltrating, the soil pores contain less water and more air. In these conditions, iron and manganese compounds are well oxidized, giving the subsoil a brownish to reddish color.

Relief also affects the susceptibility to and intensity of both geologic and recent accelerated erosion. Soils on the steeper slopes or in areas where slopes are long are more susceptible to erosion than soils that formed in nearly level or level areas or where slopes are short. Maintaining a partial or complete cover of vegetation or plant residue can significantly reduce the hazard of erosion caused by relief. For example, Senachwine soils that have slopes of 18 to 60 percent generally support trees, herbaceous plants, and grasses. Because of the vegetative cover, these soils are susceptible to little or no erosion. Many areas of Miami soils that have slopes of 10 to 18 percent are cultivated. Failure to maintain erosion-control systems on these soils has resulted in moderate or severe accelerated erosion of the surface soil. The loss of surface soil material in one place results in deposition and accumulation in another place, affecting both the rate of soil formation and the development and thickness of soil horizons.

Time

To a great extent, time determines the degree of profile development in a soil. The influence of time, however, is modified by wetness, erosion, the deposition of material, and local relief.

The differences among soils resulting from the length of time the parent material has been in place are commonly expressed in the degree of profile development. Sawmill soils have a very weakly expressed profile because they are on low flood plains that periodically receive new alluvial sediments. Consequently, they have not been in place long enough for the development of distinct horizons. Catlin soils, which occur on ground moraines, exhibit stronger development than the Sawmill soils. They have distinct horizons because the loess and underlying till in which they formed have been in place a much longer time.

In most of the upland soils, enough time has passed to allow the removal of calcium carbonate from the upper 40 or more inches of the profile through leaching. In sloping areas, however, geologic and modern erosion has kept pace with or has exceeded the rate of soil development. Calcium carbonate typically occurs closer to the soil surface in these soils as this leached upper mantle is eroded away. Soils in these areas, such as Wyanet soils, are calcareous within a depth of 40 inches.

Classification of the Soils

The system of soil classification used by the National Cooperative Soil Survey has six categories (Soil Survey Staff, 1999). Beginning with the broadest, these categories are the order, suborder, great group, subgroup, family, and series. Classification is based on soil properties observed in the field, inferred from observations, or measured in laboratory analyses. Table 4 shows the classification of the soils in the survey area. The categories are defined in the following paragraphs.

ORDER. Twelve soil orders are recognized. The differences among orders reflect the dominant soil-forming processes and the degree of soil formation. Each order is identified by a word ending in *sol*. An example is Mollisol.

SUBORDER. Each order is divided into suborders on the basis of properties that influence soil genesis, are important to plant growth, or reflect the most important variables within the orders. The last syllable in the name of a suborder indicates the order. An example is Udoll (*Ud*, meaning humid, plus *oll*, from Mollisol).

GREAT GROUP. Each suborder is divided into great groups on the basis of close similarities in kind, arrangement, and degree of development of pedogenic horizons; soil moisture and temperature regimes; type of saturation; and base status. Each great group is identified by the name of a suborder and by a prefix that indicates a property of the soil. An example is Argiudolls (*Argi*, referring to an accumulation of clay in the subsoil, plus *udoll*, the suborder of the Mollisols that has a udic moisture regime).

SUBGROUP. Each great group has a typic subgroup. Other subgroups are intergrades or extragrades. The typic subgroup is the central concept of the great group; it is not necessarily the most extensive. Intergrades are transitions to other orders, suborders, or great groups. Extragrades have some properties that are not representative of the great group but do not indicate transitions to any other taxonomic class. Each subgroup is identified by one or more adjectives preceding the name of the great group. An example is Aquic Argiudolls.

FAMILY. Families are established within a subgroup on the basis of physical and chemical properties and other characteristics that affect management. Generally, these properties are those of horizons below plow depth where there is much biological activity. Among the properties and characteristics considered are particle-size class, mineralogy class, cation-exchange activity class, soil temperature regime, soil depth, and reaction class. A family name consists of the name of a subgroup preceded by terms that indicate soil properties. An example is fine, smectitic, mesic Aquic Argiudolls.

SERIES. The series consists of soils within a family that have horizons similar in color, texture, structure, reaction, consistence, mineral and chemical composition, and arrangement in the profile. An example is the Ipava series.

Soil Series and Detailed Soil Map Units

In this section, arranged in alphabetical order, each major soil series recognized in the survey area is described. Each series description is followed by detailed descriptions of the associated soil map units.

Characteristics of the soil and the material in which it formed are identified for each soil series. A pedon, a small three-dimensional area of soil, that is typical of the series in the survey area is described. The detailed description of each soil horizon follows standards in the “Soil Survey Manual” (Soil Survey Division Staff, 1993). Many of the technical terms used in the descriptions are defined in “Soil Taxonomy” (Soil Survey Staff, 1999) and in “Keys to Soil Taxonomy” (Soil Survey Staff, 2003). Unless otherwise stated, colors in the descriptions are for moist soil. Following the pedon description is the range of important characteristics of the soils in the series.

In some instances, the typical pedon for the series is located outside De Witt County. The selection of typical pedons is based on the range of characteristics for the series as it occurs throughout a particular major land resource area (MLRA). The Sable series, for example, is common in MLRA 108 (Illinois and Iowa Deep Loess and Drift). The typical pedon of the Sable series is located in Warren County, Illinois. The soil properties of this pedon are representative of the Sable soils that occur not only in Warren County but also in De Witt County and other counties in MLRA 108.

The map units on the detailed soil maps in this survey represent the soils or miscellaneous areas in the survey area. The map unit descriptions in this section, along with the maps, can be used to determine the suitability and potential of a unit for specific uses. They also can be used to plan the management needed for those uses. More information about each map unit is given under the headings “Use and Management of the Soils” and “Soil Properties.”

A map unit delineation on a soil map represents an area dominated by one or more major kinds of soil or miscellaneous areas. A map unit is identified and named according to the taxonomic classification of the dominant soils. Within a taxonomic class there are precisely defined limits for the properties of the soils. On the landscape, however, the soils are natural phenomena, and they have the characteristic variability of all natural phenomena. Thus, the range of some observed properties may extend beyond the limits defined for a taxonomic class. Areas of soils of a single taxonomic class rarely, if ever, can be mapped without including areas of other taxonomic classes. Consequently, every map unit is made up of the soils or miscellaneous areas for which it is named and some minor components that belong to taxonomic classes other than those of the major soils.

Most minor soils have properties similar to those of the dominant soil or soils in the map unit, and thus they do not affect use and management. These are called noncontrasting, or similar, components. They may or may not be mentioned in a particular map unit description. Other minor components, however, have properties and behavioral characteristics divergent enough to affect use or to require different management. These are called contrasting, or dissimilar, components. They generally are in small areas and could not be mapped separately because of the scale used. Some small areas of strongly contrasting soils or miscellaneous areas are identified by a special symbol on the maps. The contrasting components are mentioned in the map unit descriptions. A few areas of minor components may not have been observed, and

consequently they are not mentioned in the descriptions, especially where the pattern was so complex that it was impractical to make enough observations to identify all the soils and miscellaneous areas on the landscape.

The presence of minor components in a map unit in no way diminishes the usefulness or accuracy of the data. The objective of mapping is not to delineate pure taxonomic classes but rather to separate the landscape into landforms or landform segments that have similar use and management requirements. The delineation of such segments on the map provides sufficient information for the development of resource plans. If intensive use of small areas is planned, however, onsite investigation is needed to define and locate the soils and miscellaneous areas.

An identifying symbol precedes the map unit name in the map unit descriptions. Each description includes general facts about the unit and gives the principal hazards and limitations to be considered in planning for specific uses.

Soils that have profiles that are almost alike make up a *soil series*. Except for differences in texture of the surface layer, all the soils of a series have major horizons that are similar in composition, thickness, and arrangement.

Soils of one series can differ in texture of the surface layer, slope, stoniness, salinity, degree of erosion, and other characteristics that affect their use. On the basis of such differences, a soil series is divided into *soil phases*. Most of the areas shown on the detailed soil maps are phases of soil series. The name of a soil phase commonly indicates a feature that affects use or management. For example, Catlin silt loam, 5 to 10 percent slopes, eroded, is a phase of the Catlin series.

Some map units are made up of two or more major soils or miscellaneous areas. These map units are called *undifferentiated groups.* An undifferentiated group is made up of two or more soils or miscellaneous areas that could be mapped individually but are mapped as one unit because similar interpretations can be made for use and management. The pattern and proportion of the soils or miscellaneous areas in a mapped area are not uniform. An area can be made up of only one of the major soils or miscellaneous areas, or it can be made up of all of them. Miami and Hennepin soils, 18 to 35 percent slopes, is an undifferentiated group in this survey area.

This survey includes *miscellaneous areas*. Such areas have little or no soil material and support little or no vegetation. Pits, gravel, is an example.

Table 5 gives the acreage and proportionate extent of each map unit. Other tables give properties of the soils and the limitations, capabilities, and potentials for many uses. The Glossary defines many of the terms used in describing the soils or miscellaneous areas.

Aetna Series

Taxonomic classification: Fine-silty, mixed, superactive, nonacid, mesic Fluvaquentic Endoaquepts

Typical Pedon

Aetna silt loam, 0 to 2 percent slopes, occasionally flooded, at an elevation of 712 feet above mean sea level; McLean County, Illinois; 780 feet north and 590 feet east of the southwest corner of sec. 23, T. 22 N., R. 2 E.; USGS Heyworth, Illinois, topographic quadrangle; lat. 40 degrees 20 minutes 36.4 seconds N. and long. 88 degrees 57 minutes 25.4 seconds W.; UTM Zone 16T, 0333782E 4467715N; NAD 83:

Ap—0 to 8 inches; dark grayish brown (10YR 4/2) silt loam; mostly weak fine subangular blocky structure; some weak thin platy structure in the lower part; friable; few distinct very dark grayish brown (10YR 3/2) organic coatings on faces of peds; neutral; abrupt smooth boundary.

Bg—8 to 22 inches; dark grayish brown (10YR 4/2), stratified silt loam and silty clay loam; mostly moderate medium subangular blocky structure; some weak thin platy structure; friable; few distinct very dark grayish brown (10YR 3/2) organic coatings on faces of peds; common medium faint brown (10YR 5/3) masses of iron and manganese accumulation in the matrix; neutral; clear smooth boundary.

Ab1—22 to 34 inches; black (10YR 2/1) silt loam; moderate coarse subangular blocky structure; friable; few medium distinct brown (10YR 4/3) masses of iron and manganese accumulation in the matrix; slightly alkaline; clear smooth boundary.

Ab2—34 to 41 inches; very dark grayish brown (10YR 3/2) silty clay loam; moderate coarse subangular blocky structure; friable; common distinct very dark gray (10YR 3/1) organo-clay films on faces of peds; few medium faint brown (10YR 5/3) masses of iron and manganese accumulation in the matrix; few medium prominent iron and manganese stains and concretions throughout; slightly alkaline; clear smooth boundary.

Bgb—41 to 46 inches; dark grayish brown (2.5Y 4/2) silty clay loam; weak coarse subangular blocky structure; friable; common distinct very dark grayish brown (10YR 3/2) organo-clay films on faces of peds; many medium distinct yellowish brown (10YR 5/4) and dark yellowish brown (10YR 4/4) masses of iron and manganese accumulation in the matrix; few medium prominent iron and manganese stains and concretions throughout; slightly alkaline; clear smooth boundary.

BCgb—46 to 60 inches; grayish brown (2.5Y 5/2) silty clay loam; weak coarse subangular blocky structure; friable; many medium prominent yellowish brown (10YR 5/6) masses of iron accumulation and distinct dark yellowish brown (10YR 4/4) masses of iron and manganese accumulation in the matrix; common medium prominent iron and manganese stains and concretions throughout; slightly alkaline.

Range in Characteristics

Depth to carbonates: More than 60 inches

Ap horizon:

Hue—10YR
Value—4
Chroma—2 or 3
Texture—silt loam
Content of rock fragments—0 to 5 percent
Reaction—slightly acid or neutral

Bw or Bg horizon:

Hue—10YR
Value—4
Chroma—2 or 3
Texture—silt loam, silty clay loam, or loam; commonly stratified
Content of rock fragments—0 to 5 percent
Reaction—moderately acid to neutral

Ab horizon:

Hue—10YR or N
Value—2 or 3
Chroma—0 to 2
Texture—silt loam or silty clay loam
Content of rock fragments—0 to 15 percent
Reaction—slightly acid to slightly alkaline

Bgb horizon:
Hue—10YR, 2.5Y, or N
Value—4 or 5
Chroma—0 to 4
Texture—silt loam, silty clay loam, loam, or clay loam
Content of rock fragments—0 to 15 percent
Reaction—slightly acid to slightly alkaline

BCgb or C horizon:
Hue—10YR, 2.5Y, or 5Y
Value—4 or 5
Chroma—1 to 4
Texture—silty clay loam, clay loam, loam, or sandy loam
Content of rock fragments—0 to 15 percent
Reaction—slightly acid to slightly alkaline

8720A—Aetna silt loam, 0 to 2 percent slopes, occasionally flooded

Setting

Landform: Flood plains

Map Unit Composition

Aetna and similar soils: 90 percent
Dissimilar soils: 10 percent

Soils of Minor Extent

Similar soils:
- Soils that have more sand in the subsoil
- Soils that have less clay in the subsoil
- Soils that have more gravel in the substratum and/or in the underlying material
- Soils that are subject to rare flooding
- Soils that have a dark surface layer

Dissimilar soils:
- The well drained Ross soils, which are nearer to the streams than the Aetna soil and are slightly higher on the landscape
- The poorly drained Sawmill soils in swales; in positions below those of the Aetna soil

Properties and Qualities of the Aetna Soil

Parent material: Silty alluvium
Drainage class: Somewhat poorly drained
Slowest permeability within a depth of 40 inches: Moderate
Permeability below a depth of 60 inches: Moderately slow
Depth to restrictive feature: More than 80 inches
Available water capacity: About 11.8 inches to a depth of 60 inches
Content of organic matter in the surface layer: 1.0 to 2.5 percent
Shrink-swell potential: Moderate
Depth and months of highest apparent seasonal high water table: 0.5 foot, January through May
Ponding: None
Frequency and most likely period of flooding: Occasional, November through June
Potential for frost action: High
Hazard of corrosion: High for steel and low for concrete

Surface runoff class: Low
Susceptibility to water erosion: Low
Susceptibility to wind erosion: Low

Interpretive Groups

Land capability classification: 2w
Prime farmland category: Prime farmland where drained
Hydric soil status: Not hydric

Birkbeck Series

Taxonomic classification: Fine-silty, mixed, superactive, mesic Oxyaquic Hapludalfs

Typical Pedon

Birkbeck silt loam, 2 to 5 percent slopes, on a slope of 2 percent at an elevation of 680 feet above mean sea level; Macon County, Illinois; 1,600 feet east and 750 feet south of the northwest corner of sec. 25, T. 17 N., R. 3 E.; USGS Argenta, Illinois, topographic quadrangle; lat. 39 degrees 54 minutes 25.2 seconds N. and long. 88 degrees 48 minutes 59.9 seconds W.; UTM Zone 16S, 0344718E 4419014N; NAD 83:

A—0 to 4 inches; very dark grayish brown (10YR 3/2) silt loam, grayish brown (10YR 5/2) dry; weak thin platy structure parting to moderate very fine granular; friable; slightly acid; abrupt smooth boundary.

E—4 to 9 inches; brown (10YR 4/3) silt loam; moderate very thin platy structure; friable; few distinct dark brown (10YR 3/3) organic coatings on faces of peds; few distinct gray (10YR 6/1) (dry) clay depletions on faces of peds; very strongly acid; clear smooth boundary.

Bt1—9 to 13 inches; dark yellowish brown (10YR 4/4) silty clay loam; weak fine subangular blocky structure parting to moderate very fine granular; friable; common distinct dark brown (10YR 3/3) organo-clay films on faces of peds; common distinct light gray (10YR 7/1) (dry) clay depletions on faces of peds; few fine irregular black (7.5YR 2.5/1) weakly cemented iron-manganese oxide nodules throughout; strongly acid; clear smooth boundary.

Bt2—13 to 24 inches; dark yellowish brown (10YR 4/4) silty clay loam; moderate fine and very fine subangular blocky structure; friable; many distinct brown (7.5YR 4/4) clay films on faces of peds; common fine irregular black (7.5YR 2.5/1) weakly cemented iron-manganese oxide nodules throughout; strongly acid; clear smooth boundary.

Bt3—24 to 29 inches; dark yellowish brown (10YR 4/4) silty clay loam; moderate fine subangular blocky structure; friable; many distinct brown (7.5YR 4/4) clay films on faces of peds; common fine irregular black (7.5YR 2.5/1) weakly cemented iron-manganese oxide nodules throughout; strongly acid; clear smooth boundary.

Bt4—29 to 42 inches; dark yellowish brown (10YR 4/4) silty clay loam; moderate medium subangular blocky structure; friable; many distinct brown (7.5YR 4/4) clay films on faces of peds; few fine distinct light brownish gray (2.5Y 6/2) iron depletions in the matrix; common fine distinct light yellowish brown (2.5Y 6/4) masses of iron and manganese accumulation in the matrix; common medium irregular black (7.5YR 2.5/1) weakly cemented iron-manganese oxide nodules throughout; strongly acid; gradual smooth boundary.

Bt5—42 to 54 inches; dark yellowish brown (10YR 4/4) silty clay loam; moderate medium and coarse subangular blocky structure; friable; many distinct brown (7.5YR 4/4) clay films on faces of peds; few fine distinct light brownish gray (2.5Y 6/2) iron depletions in the matrix; common fine distinct light yellowish brown (2.5Y 6/4) masses of iron and manganese accumulation and few medium distinct strong

brown (7.5YR 5/6) masses of iron accumulation in the matrix; common medium irregular black (7.5YR 2.5/1) weakly cemented iron-manganese oxide nodules throughout; slightly acid; clear smooth boundary.

2Bt6—54 to 60 inches; dark yellowish brown (10YR 4/4) loam; weak coarse subangular blocky structure; friable; few distinct brown (7.5YR 4/4) clay films on faces of peds; few distinct very dark grayish brown (10YR 3/2) organo-clay films in pores; common fine distinct light brownish gray (2.5Y 6/2) iron depletions in the matrix; common medium distinct light yellowish brown (2.5Y 6/4) masses of iron and manganese accumulation and common fine distinct strong brown (7.5YR 5/6) masses of iron accumulation in the matrix; few fine irregular black (7.5YR 2.5/1) weakly cemented iron-manganese oxide nodules throughout; neutral; gradual smooth boundary.

2C—60 to 68 inches; light olive brown (2.5Y 5/4) loam; massive; firm; few distinct very dark grayish brown (10YR 3/2) organo-clay films in pores; common fine distinct light brownish gray (2.5Y 6/2) iron depletions in the matrix; common fine faint light yellowish brown (2.5Y 6/4) and common fine distinct yellowish brown (10YR 5/6) masses of iron accumulation in the matrix; few fine irregular black (7.5YR 2.5/1) weakly cemented iron-manganese oxide nodules throughout; strongly effervescent; slightly alkaline.

Range in Characteristics

Thickness of the loess: 40 to 60 inches
Depth to carbonates: 40 to 70 inches
Depth to the base of the argillic horizon: 40 to 70 inches

Ap or A horizon:
Hue—10YR
Value—2 to 5
Chroma—1 to 3
Texture—silt loam
Content of rock fragments—none
Reaction—moderately acid to neutral

E horizon (not in all pedons):
Hue—10YR
Value—4 or 5
Chroma—2 to 4
Texture—silt loam
Content of rock fragments—none
Reaction—very strongly acid to slightly acid

Bt horizon:
Hue—10YR
Value—4 or 5
Chroma—3 to 6
Texture—silty clay loam or silt loam
Content of rock fragments—none
Reaction—very strongly acid to neutral

2Bt and 2BC horizons:
Hue—7.5YR, 10YR, or 2.5Y
Value—4 to 6
Chroma—2 to 8
Texture—loam, clay loam, silty clay loam, or silt loam
Content of rock fragments—0 to 15 percent
Reaction—slightly acid to slightly alkaline

2C horizon:
Hue—10YR or 2.5Y
Value—4 to 6
Chroma—2 to 4
Texture—loam or clay loam
Content of rock fragments—0 to 15 percent
Reaction—slightly alkaline or moderately alkaline

233B—Birkbeck silt loam, 2 to 5 percent slopes

Setting

Landform: Ground moraines and end moraines
Position on the landform: Summits, backslopes, and shoulders

Map Unit Composition

Birkbeck and similar soils: 92 percent
Dissimilar soils: 8 percent

Soils of Minor Extent

Similar soils:
- Soils that are less gray in the lower part of the subsoil
- Soils that have less sand and gravel in the subsoil
- Soils that have less sand and gravel in the substratum and/or in the underlying material
- Soils that have a darker surface layer
- Soils that have a root-restrictive substratum

Dissimilar soils:
- The poorly drained Sable soils in swales; in positions below those of the Birkbeck soil

Properties and Qualities of the Birkbeck Soil

Parent material: Loess over till
Drainage class: Moderately well drained
Slowest permeability within a depth of 40 inches: Moderate
Permeability below a depth of 60 inches: Moderately slow or moderate
Depth to restrictive feature: More than 80 inches
Available water capacity: About 10.6 inches to a depth of 60 inches
Content of organic matter in the surface layer: 1.0 to 3.0 percent
Shrink-swell potential: Moderate
Depth and months of highest perched seasonal high water table: 2 feet, February through April
Ponding: None
Flooding: None
Potential for frost action: High
Hazard of corrosion: High for steel and concrete
Surface runoff class: Low
Susceptibility to water erosion: Moderate
Susceptibility to wind erosion: Low

Interpretive Groups

Land capability classification: 2e
Prime farmland category: Prime farmland
Hydric soil status: Not hydric

233C2—Birkbeck silt loam, 5 to 10 percent slopes, eroded

Setting

Landform: Ground moraines and end moraines
Position on the landform: Backslopes and shoulders

Map Unit Composition

Birkbeck and similar soils: 90 percent
Dissimilar soils: 10 percent

Soils of Minor Extent

Similar soils:
- Soils that are less gray in the lower part of the subsoil
- Soils that have more sand and gravel in the substratum and/or in the underlying material
- Soils that have a darker surface layer
- Soils that have a root-restrictive substratum

Dissimilar soils:
- The poorly drained Sable soils in drainageways and swales; in positions below those of the Birkbeck soil

Properties and Qualities of the Birkbeck Soil

Parent material: Loess over till
Drainage class: Moderately well drained
Slowest permeability within a depth of 40 inches: Moderate
Permeability below a depth of 60 inches: Moderately slow
Depth to restrictive feature: More than 80 inches
Available water capacity: About 10.3 inches to a depth of 60 inches
Content of organic matter in the surface layer: 0.5 to 2.5 percent
Shrink-swell potential: Moderate
Depth and months of highest perched seasonal high water table: 2 feet, February through April
Ponding: None
Flooding: None
Accelerated erosion: The surface layer has been thinned by erosion.
Potential for frost action: High
Hazard of corrosion: High for steel and concrete
Surface runoff class: Medium
Susceptibility to water erosion: High
Susceptibility to wind erosion: Low

Interpretive Groups

Land capability classification: 3e
Prime farmland category: Not prime farmland
Hydric soil status: Not hydric

Buckhart Series

Taxonomic classification: Fine-silty, mixed, superactive, mesic Oxyaquic Argiudolls

Typical Pedon

Buckhart silt loam, till substratum, 2 to 5 percent slopes, on a slope of 3 percent at an elevation of 696 feet above mean sea level; Logan County, Illinois; 1,400 feet west and

2,500 feet south of the northeast corner of sec. 24, T. 21 N., R. 1 W.; USGS McLean, Illinois, topographic quadrangle; lat. 40 degrees 15 minutes 39.6 seconds N. and long. 89 degrees 09 minutes 11.1 seconds W.; UTM Zone 16T, 0316908E 4458950N; NAD 83:

Ap—0 to 8 inches; very dark grayish brown (10YR 3/2) silt loam, grayish brown (10YR 5/2) dry; moderate medium granular structure; friable; few fine roots; slightly acid; clear smooth boundary.

A—8 to 13 inches; very dark grayish brown (10YR 3/2) silt loam, grayish brown (10YR 5/2) dry; friable; slightly acid; abrupt smooth boundary.

Bt1—13 to 25 inches; brown (10YR 4/3) silty clay loam; moderate medium subangular blocky structure; friable; few fine roots; many distinct very dark grayish brown (10YR 3/2) organo-clay films on faces of peds; common fine distinct rounded black (7.5YR 2.5/1) masses of manganese accumulation throughout below a depth of 20 inches; neutral; clear smooth boundary.

Bt2—25 to 31 inches; dark yellowish brown (10YR 4/4) silty clay loam; moderate medium subangular blocky structure; friable; few fine roots; many distinct dark brown (10YR 3/3) organo-clay films on faces of peds; few distinct very dark grayish brown (10YR 3/2) organic coatings lining pores; common fine prominent rounded black (7.5YR 2.5/1) masses of manganese accumulation throughout; neutral; clear smooth boundary.

Bt3—31 to 47 inches; dark yellowish brown (10YR 4/6) silty clay loam; weak medium prismatic structure; friable; few fine roots; common distinct brown (10YR 4/3) clay films on faces of peds; common fine prominent light brownish gray (10YR 6/2) iron depletions lining pores; common fine faint strong brown (7.5YR 5/6) masses of iron accumulation throughout; common fine prominent rounded black (7.5YR 2.5/1) masses of manganese accumulation throughout; neutral; clear smooth boundary.

BC—47 to 59 inches; yellowish brown (10YR 5/4) silt loam; weak coarse prismatic structure; friable; common medium distinct light brownish gray (10YR 6/2) iron depletions throughout; common distinct strong brown (7.5YR 5/6) masses of iron accumulation throughout; common fine prominent rounded black (7.5YR 2.5/1) masses of manganese accumulation throughout; neutral; gradual smooth boundary.

C1—59 to 69 inches; yellowish brown (10YR 5/4) silt loam; massive; friable; many medium distinct light brownish gray (10YR 6/2) iron depletions throughout; common distinct strong brown (7.5YR 5/6) masses of iron accumulation throughout; few fine prominent rounded black (7.5YR 2.5/1) masses of manganese accumulation throughout; slightly alkaline; clear smooth boundary.

2C2—69 to 80 inches; yellowish brown (10YR 5/4) loam; massive; friable; few fine prominent black (7.5YR 2.5/1) masses of manganese accumulation throughout; 1 percent fine rock fragments; slightly alkaline.

Range in Characteristics

Thickness of the mollic epipedon: 10 to 20 inches
Thickness of the loess: 60 to 80 inches
Depth to carbonates: More than 40 inches
Depth to the base of the argillic horizon: 40 to 55 inches

Ap or A horizon:
Hue—10YR
Value—2 or 3
Chroma—1 to 3
Texture—silt loam

Content of rock fragments—none
Reaction—moderately acid to neutral

Bt horizon:
Hue—10YR or 2.5Y
Value—4 to 6
Chroma—3 to 6
Texture—silty clay loam or silt loam
Content of rock fragments—none
Reaction—moderately acid to neutral

BC or C horizon:
Hue—10YR or 2.5Y
Value—5 or 6
Chroma—2 to 4
Texture—silt loam
Content of rock fragments—none
Reaction—neutral or slightly alkaline

2C horizon:
Hue—10YR or 2.5Y
Value—5 or 6
Chroma—2 to 6
Texture—loam
Content of rock fragments—0 to 5 percent
Reaction—neutral to moderately alkaline

749B—Buckhart silt loam, till substratum, 2 to 5 percent slopes

Setting

Landform: Ground moraines
Position on the landform: Summits, shoulders, and backslopes

Map Unit Composition

Buckhart and similar soils: 93 percent
Dissimilar soils: 7 percent

Soils of Minor Extent

Similar soils:
- Soils that are less gray in the lower part of the subsoil
- Soils that have less sand and gravel in the substratum and/or in the underlying material
- Soils that have carbonates at a depth of less than 40 inches
- Soils that have a light-colored surface layer
- Soils that have a gray subsoil
- Soils that have a root-restrictive substratum

Dissimilar soils:
- The poorly drained Sable soils in swales; in positions below those of the Buckhart soil

Properties and Qualities of the Buckhart Soil

Parent material: Very deep loess over till
Drainage class: Moderately well drained

Slowest permeability within a depth of 40 inches: Moderate
Permeability below a depth of 60 inches: Moderately slow or moderate
Depth to restrictive feature: More than 80 inches
Available water capacity: About 11.9 inches to a depth of 60 inches
Content of organic matter in the surface layer: 3.0 to 4.0 percent
Shrink-swell potential: Moderate
Depth and months of highest perched seasonal high water table: 2 feet, February through April
Ponding: None
Flooding: None
Potential for frost action: High
Hazard of corrosion: High for steel and moderate for concrete
Surface runoff class: Low
Susceptibility to water erosion: Low
Susceptibility to wind erosion: Low

Interpretive Groups

Land capability classification: 2e
Prime farmland category: Prime farmland
Hydric soil status: Not hydric

Camden Series

Taxonomic classification: Fine-silty, mixed, superactive, mesic Typic Hapludalfs

Typical Pedon

Camden silt loam, 5 to 10 percent slopes, eroded, on a slope of 8 percent at an elevation of 613 feet above mean sea level; Bureau County, Illinois; 640 feet west and 2,100 feet south of the northeast corner of sec. 35, T. 16 N., R. 8 E.; USGS Wyanet, Illinois, topographic quadrangle; lat. 41 degrees 19 minutes 47.5 seconds N. and long. 89 degrees 31 minutes 54 seconds W.; UTM Zone 16T, 0288138E 4578467N; NAD 83:

Ap—0 to 7 inches; brown (10YR 4/3) silt loam, pale brown (10YR 6/3) dry; moderate medium granular structure; friable; many fine and few medium roots; strongly acid; abrupt smooth boundary.

Bt1—7 to 10 inches; dark yellowish brown (10YR 4/4) silt loam; moderate medium prismatic structure parting to moderate medium granular; friable; many fine and few medium roots; few faint brown (10YR 4/3) clay films on faces of peds; strongly acid; clear smooth boundary.

Bt2—10 to 20 inches; yellowish brown (10YR 5/4) silty clay loam; strong very fine and fine angular blocky structure; friable; common fine and few medium roots; many distinct brown (7.5YR 4/4) clay films on faces of peds; slightly acid; clear smooth boundary.

Bt3—20 to 29 inches; yellowish brown (10YR 5/4) silty clay loam; moderate medium subangular blocky structure; friable; common fine and few medium roots; common distinct brown (7.5YR 4/4) clay films on faces of peds; few fine prominent masses of iron-manganese accumulation throughout; slightly acid; clear smooth boundary.

Bt4—29 to 34 inches; yellowish brown (10YR 5/4) silty clay loam; weak medium prismatic structure parting to moderate medium subangular blocky; friable; few fine and few medium roots; common distinct dark yellowish brown (10YR 4/4) clay films on faces of peds; few distinct light gray (10YR 7/2) silt coatings on faces of peds; few fine masses of iron-manganese accumulation throughout; slightly acid; clear smooth boundary.

2Bt5—34 to 43 inches; dark yellowish brown (10YR 4/4) loam; moderate coarse prismatic structure; friable; few fine roots; few faint brown (10YR 4/3) clay films on faces of peds; common fine masses of iron-manganese accumulation throughout; slightly acid; clear smooth boundary.

2BCt—43 to 55 inches; dark yellowish brown (10YR 4/4) sandy loam; weak coarse subangular blocky structure; very friable; few distinct brown (7.5YR 4/4) clay films on faces of peds; slightly acid; clear smooth boundary.

2C—55 to 60 inches; brown (7.5YR 4/4) sandy loam with strata of loamy sand; massive; very friable; slightly acid.

Range in Characteristics

Thickness of the loess: 24 to 40 inches
Depth to carbonates: More than 60 inches
Depth to the base of the argillic horizon: 30 to 65 inches

Ap or A horizon:
Hue—10YR
Value—3 to 5
Chroma—2 to 4
Texture—silt loam
Content of rock fragments—none
Reaction—strongly acid to neutral

E horizon (where present):
Hue—10YR
Value—4 to 6
Chroma—2 or 3
Texture—silt loam
Content of rock fragments—none
Reaction—strongly acid to neutral

Bt horizon:
Hue—7.5YR or 10YR
Value—4 to 6
Chroma—3 to 6
Texture—silty clay loam or silt loam
Content of rock fragments—none
Reaction—strongly acid to neutral

2Bt or 2BCt horizon:
Hue—7.5YR, 10YR, or 2.5YR
Value—4 to 6
Chroma—3 to 6
Texture—loam, sandy loam, silty clay loam, clay loam, fine sandy loam, sandy clay loam, or silt loam
Content of rock fragments—0 to 10 percent
Reaction—strongly acid to neutral

2C horizon:
Hue—10YR or 7.5YR
Value—4 to 6
Chroma—3 to 6
Texture—sandy loam, loam, loamy sand, or silt loam; stratified in some pedons
Content of rock fragments—0 to 13 percent
Reaction—strongly acid to moderately alkaline

134C2—Camden silt loam, 5 to 10 percent slopes, eroded

Setting

Landform: Stream terraces and outwash plains
Position on the landform: Shoulders and backslopes

Map Unit Composition

Camden and similar soils: 97 percent
Dissimilar soils: 3 percent

Soils of Minor Extent

Similar soils:
- Soils that contain more sand in the subsoil
- Soils that have less sand in the substratum and/or in the underlying material
- Soils that have more gravel in the substratum and/or in the underlying material

Dissimilar soils:
- The poorly drained Sawmill soils on flood plains; in positions below those of the Camden soil

Properties and Qualities of the Camden Soil

Parent material: Loess over stratified loamy outwash
Drainage class: Well drained
Slowest permeability within a depth of 40 inches: Moderate
Permeability below a depth of 60 inches: Moderately rapid
Depth to restrictive feature: More than 80 inches
Available water capacity: About 9.4 inches to a depth of 60 inches
Content of organic matter in the surface layer: 0.5 to 2.0 percent
Shrink-swell potential: Moderate
Ponding: None
Flooding: None
Accelerated erosion: The surface layer has been thinned by erosion.
Potential for frost action: High
Hazard of corrosion: Moderate for steel and concrete
Surface runoff class: Medium
Susceptibility to water erosion: High
Susceptibility to wind erosion: Low

Interpretive Groups

Land capability classification: 3e
Prime farmland category: Not prime farmland
Hydric soil status: Not hydric

7134C—Camden silt loam, 5 to 10 percent slopes, rarely flooded

Setting

Landform: Stream terraces and flood-plain steps
Position on the landform: Shoulders

Map Unit Composition

Camden and similar soils: 97 percent
Dissimilar soils: 3 percent

Soils of Minor Extent

Similar soils:
- Soils that have sand and gravel on the surface
- Soils that have more sand and gravel in the substratum and/or in the underlying material
- Soils that have less sand in the substratum and/or in the underlying material
- Soils that have an eroded surface layer
- Soils that are not subject to flooding
- Soils that are subject to occasional flooding

Dissimilar soils:
- The poorly drained Sawmill soils on flood plains; in positions below those of the Camden soil

Properties and Qualities of the Camden Soil

Parent material: Loess over loamy and sandy outwash
Drainage class: Well drained
Slowest permeability within a depth of 40 inches: Moderate
Permeability below a depth of 60 inches: Moderately rapid
Depth to restrictive feature: More than 80 inches
Available water capacity: About 9.4 inches to a depth of 60 inches
Content of organic matter in the surface layer: 1.0 to 2.5 percent
Shrink-swell potential: Moderate
Ponding: None
Frequency and most likely period of flooding: Rare, November through June
Potential for frost action: High
Hazard of corrosion: Moderate for steel and concrete
Surface runoff class: Medium
Susceptibility to water erosion: High
Susceptibility to wind erosion: Low

Interpretive Groups

Land capability classification: 3e
Prime farmland category: Not prime farmland
Hydric soil status: Not hydric

Catlin Series

Taxonomic classification: Fine-silty, mixed, superactive, mesic Oxyaquic Argiudolls
Taxadjunct features: The Catlin soils in map units 171B2 and 171C2 have a thinner dark surface layer than is defined as the range for the series. The Catlin soil in map unit 171B2 also has gray colors closer to the surface than is defined as the range for the series. These differences, however, do not significantly affect the use or behavior of the soils. The Catlin soil in map unit 171B2 is classified as a fine-silty, mixed, superactive, mesic Aquollic Hapludalf, and the Catlin soil in map unit 171C2 is classified as a fine-silty, mixed, superactive, mesic Mollic Oxyaquic Hapludalf.

Typical Pedon

Catlin silt loam, 2 to 5 percent slopes, on a slope of 3 percent at an elevation of 791 feet above mean sea level; McLean County, Illinois; 330 feet east and 70 feet south of the northwest corner of sec. 11, T. 23 N., R. 1 E.; USGS Bloomington West, Illinois, topographic quadrangle; lat. 40 degrees 28 minutes 22.3 seconds N. and long. 89 degrees 04 minutes 34.8 seconds W.; UTM Zone 16T, 0323987E 4482314N; NAD 83:

Ap—0 to 11 inches; very dark grayish brown (10YR 3/2) silt loam, grayish brown (10YR 5/2) dry; moderate fine and medium subangular blocky structure; friable: neutral; clear smooth boundary.

AB—11 to 16 inches; dark brown (10YR 3/3) silty clay loam, brown (10YR 5/3) dry; moderate fine subangular blocky structure; friable; neutral; abrupt smooth boundary.

Bt1—16 to 26 inches; dark yellowish brown (10YR 4/4) silty clay loam; strong fine and medium angular blocky structure; friable; common distinct dark yellowish brown (10YR 3/4) clay films on faces of peds; few fine prominent stains of iron-manganese throughout; slightly acid; clear smooth boundary.

Bt2—26 to 41 inches; dark yellowish brown (10YR 4/6) silty clay loam; weak medium and coarse subangular blocky structure; friable; common distinct brown (10YR 4/3) and dark yellowish brown (10YR 4/4) clay films on faces of peds; few fine prominent grayish brown (10YR 5/2) iron depletions in the matrix; few fine prominent stains of iron-manganese throughout; neutral; clear smooth boundary.

2Bt3—41 to 45 inches; yellowish brown (10YR 5/4) clay loam; weak coarse subangular blocky structure; friable; very few faint very dark grayish brown (10YR 3/2) organo-clay films lining root channels; few fine distinct grayish brown (10YR 5/2) iron depletions in the matrix; few fine prominent stains of iron-manganese throughout; 2 percent fine gravel; very slightly effervescent; moderately alkaline; clear smooth boundary.

2C—45 to 60 inches; light olive brown (2.5Y 5/4) loam; massive; firm; few medium prominent yellowish brown (10YR 5/6) masses of iron accumulation and common fine and medium prominent grayish brown (10YR 5/2) iron depletions in the matrix; few fine prominent stains of iron-manganese throughout; few fine prominent masses of calcium carbonate throughout; 2 percent fine gravel; strongly effervescent; moderately alkaline.

Range in Characteristics

Thickness of the mollic epipedon or dark surface layer: 7 to 20 inches
Thickness of the loess: 40 to 60 inches
Depth to carbonates: 40 to 60 inches
Depth to the base of the argillic horizon: 45 to 65 inches

Ap or A horizon:
Hue—10YR
Value—2 or 3
Chroma—1 to 3
Texture—silt loam
Content of rock fragments—none
Reaction—moderately acid to neutral

AB or BA horizon (not in all pedons):
Hue—10YR
Value—2 or 3
Chroma—1 to 3
Texture—silt loam or silty clay loam
Content of rock fragments—none
Reaction—moderately acid to neutral

Bt horizon:
Hue—10YR or 2.5Y
Value—3 to 5
Chroma—3 to 6
Texture—silty clay loam or silt loam

Content of rock fragments—none
Reaction—slightly acid or neutral

2Bt horizon:
Hue—2.5YR, 7.5YR, or 10YR
Value—4 or 5
Chroma—2 to 8
Texture—clay loam, loam, silty clay loam, or silt loam
Content of rock fragments—0 to 10 percent
Reaction—slightly acid to moderately alkaline

2BC horizon (where present) or 2C horizon:
Hue—2.5YR, 7.5YR, or 10YR
Value—4 or 5
Chroma—2 to 8
Texture—clay loam, loam, silty clay loam, or silt loam
Content of rock fragments—0 to 10 percent
Reaction—neutral to moderately alkaline

171B—Catlin silt loam, 2 to 5 percent slopes

Setting

Landform: Ground moraines
Position on the landform: Summits and shoulders

Map Unit Composition

Catlin and similar soils: 94 percent
Dissimilar soils: 6 percent

Soils of Minor Extent

Similar soils:
- Soils that have an eroded surface layer
- Soils that have more sand in the subsoil
- Soils that have less sand in the substratum and/or in the underlying material
- Soils that are grayer in the upper part of the subsoil
- Soils that have a root-restrictive substratum

Dissimilar soils:
- The poorly drained Sable soils in swales

Properties and Qualities of the Catlin Soil

Parent material: Loess over till
Drainage class: Moderately well drained
Slowest permeability within a depth of 40 inches: Moderate
Permeability below a depth of 60 inches: Moderately slow
Depth to restrictive feature: More than 80 inches
Available water capacity: About 10.0 inches to a depth of 60 inches
Content of organic matter in the surface layer: 2.5 to 4.0 percent
Shrink-swell potential: Moderate
Depth and months of highest perched seasonal high water table: 2 feet, February through April
Ponding: None
Flooding: None
Potential for frost action: High
Hazard of corrosion: High for steel and moderate for concrete

Surface runoff class: Low
Susceptibility to water erosion: Moderate
Susceptibility to wind erosion: Low

Interpretive Groups

Land capability classification: 2e
Prime farmland category: Prime farmland
Hydric soil status: Not hydric

171B2—Catlin silt loam, 2 to 5 percent slopes, eroded

Setting

Landform: Ground moraines
Position on the landform: Backslopes and summits

Map Unit Composition

Catlin and similar soils: 93 percent
Dissimilar soils: 7 percent

Soils of Minor Extent

Similar soils:
- Soils that are not eroded
- Soils that have more sand in the subsoil
- Soils that have less sand in the substratum and/or in the underlying material
- Soils that are grayer in the upper part of the subsoil
- Soils that have a root-restrictive substratum

Dissimilar soils:
- The poorly drained Sable soils in swales

Properties and Qualities of the Catlin Soil

Parent material: Loess over till
Drainage class: Moderately well drained
Slowest permeability within a depth of 40 inches: Moderate
Permeability below a depth of 60 inches: Moderately slow
Depth to restrictive feature: More than 80 inches
Available water capacity: About 10.1 inches to a depth of 60 inches
Content of organic matter in the surface layer: 1.5 to 3.5 percent
Shrink-swell potential: Moderate
Depth and months of highest perched seasonal high water table: 1.5 feet, February through April
Ponding: None
Flooding: None
Accelerated erosion: The surface layer has been thinned by erosion.
Potential for frost action: High
Hazard of corrosion: High for steel and low for concrete
Surface runoff class: Low
Susceptibility to water erosion: Moderate
Susceptibility to wind erosion: Low

Interpretive Groups

Land capability classification: 2e
Prime farmland category: Prime farmland
Hydric soil status: Not hydric

171C2—Catlin silt loam, 5 to 10 percent slopes, eroded

Setting

Landform: Ground moraines and end moraines
Position on the landform: Summits and backslopes

Map Unit Composition

Catlin and similar soils: 90 percent
Dissimilar soils: 10 percent

Soils of Minor Extent

Similar soils:
- Soils that are not eroded
- Soils that have less sand in the substratum and/or in the underlying material
- Soils that are grayer in the upper part of the subsoil
- Soils that have a root-restrictive substratum

Dissimilar soils:
- The poorly drained Sable soils in swales

Properties and Qualities of the Catlin Soil

Parent material: Loess over till
Drainage class: Moderately well drained
Slowest permeability within a depth of 40 inches: Moderate
Permeability below a depth of 60 inches: Moderately slow
Depth to restrictive feature: More than 80 inches
Available water capacity: About 10.8 inches to a depth of 60 inches
Content of organic matter in the surface layer: 1.5 to 3.5 percent
Shrink-swell potential: Moderate
Depth and months of highest perched seasonal high water table: 2 feet, February through April
Ponding: None
Flooding: None
Accelerated erosion: The surface layer has been thinned by erosion.
Potential for frost action: High
Hazard of corrosion: High for steel and moderate for concrete
Surface runoff class: Medium
Susceptibility to water erosion: Moderate
Susceptibility to wind erosion: Low

Interpretive Groups

Land capability classification: 3e
Prime farmland category: Not prime farmland
Hydric soil status: Not hydric

Dana Series

Taxonomic classification: Fine-silty, mixed, superactive, mesic Oxyaquic Argiudolls
Taxadjunct features: The Dana soils in this survey area have a thinner dark surface layer than is defined as the range for the series. This difference, however, does not significantly affect the use or behavior of the soils. These soils are classified as fine-silty, mixed, superactive, mesic Mollic Oxyaquic Hapludalfs.

Typical Pedon

Dana silt loam, 2 to 5 percent slopes, eroded, on a slope of 4 percent at an elevation of 720 feet above mean sea level; McLean County, Illinois; 152 feet east and 924 feet south of the northwest corner of sec. 9, T. 21 N., R. 2 E.; USGS Heyworth, Illinois, topographic quadrangle; lat. 40 degrees 17 minutes 39.8 seconds N. and long. 88 degrees 59 minutes 48.2 seconds W.; UTM Zone 16T, 0330288E 4462345N; NAD 83:

Ap—0 to 7 inches; very dark grayish brown (10YR 3/2) silt loam mixed with dark yellowish brown (10YR 4/4) subsoil material; weak medium subangular blocky structure; friable; slightly acid; abrupt smooth boundary.

Bt1—7 to 11 inches; dark yellowish brown (10YR 4/4) silty clay loam; moderate fine subangular blocky structure; friable; common distinct very dark grayish brown (10YR 3/2) and dark brown (10YR 3/3) organo-clay films on faces of peds; slightly acid; clear smooth boundary.

Bt2—11 to 19 inches; dark yellowish brown (10YR 4/4) silty clay loam; moderate fine and medium subangular blocky structure; friable; common distinct dark brown (10YR 3/3) organo-clay films and brown (10YR 4/3) clay films on faces of peds; few fine prominent iron-manganese concretions and stains throughout; moderately acid; clear smooth boundary.

Bt3—19 to 34 inches; yellowish brown (10YR 5/4) silty clay loam; weak medium subangular blocky structure; friable; common distinct brown (10YR 4/3) clay films on faces of peds; few fine prominent yellowish brown (10YR 5/8) masses of iron accumulation, few fine faint brown (10YR 5/3) masses of iron and manganese accumulation, and few fine distinct grayish brown (10YR 5/2) iron depletions in the matrix; few fine prominent iron-manganese stains and concretions throughout; slightly acid; abrupt smooth boundary.

2Bt4—34 to 44 inches; light olive brown (2.5Y 5/4) clay loam; weak medium prismatic structure parting to weak medium and coarse subangular blocky; friable; few fine brown (10YR 4/3) clay films on faces of peds; few fine distinct grayish brown (2.5Y 5/2) iron depletions in the matrix; few fine prominent iron-manganese concretions and stains throughout; 3 percent fine gravel; neutral; clear smooth boundary.

2BC—44 to 53 inches; light olive brown (2.5Y 5/4) clay loam; weak medium prismatic structure parting to weak coarse subangular blocky; friable; few fine distinct grayish brown (2.5Y 5/2) iron depletions in the matrix; few fine prominent iron-manganese concretions and stains throughout; 3 percent fine gravel; slightly effervescent; slightly alkaline; gradual smooth boundary.

2C—53 to 60 inches; light olive brown (2.5Y 5/4) loam; massive; firm; few fine prominent yellowish brown (10YR 5/8) masses of iron accumulation and common fine and medium distinct grayish brown (2.5Y 5/2) iron depletions in the matrix; few fine prominent iron-manganese concretions and stains throughout; 4 percent fine gravel; strongly effervescent; moderately alkaline.

Range in Characteristics

Thickness of the dark surface layer: 7 to 9 inches
Thickness of the loess: 22 to 40 inches
Depth to carbonates: 40 to 60 inches
Depth to the base of the argillic horizon: 32 to 60 inches

Ap or A horizon:
Hue—10YR
Value—2 or 3
Chroma—1 or 2
Texture—silt loam
Content of rock fragments—0 to 1 percent
Reaction—moderately acid to neutral

Bt horizon:
Hue—10YR
Value—4 or 5
Chroma—3 to 6
Texture—silty clay loam
Content of rock fragments—0 to 1 percent
Reaction—strongly acid to neutral

2Bt horizon:
Hue—10YR or 2.5Y
Value—4 or 5
Chroma—3 or 4
Texture—clay loam
Content of rock fragments—1 to 7 percent
Reaction—moderately acid to neutral

2BC horizon (not in all pedons):
Hue—10YR or 2.5Y
Value—4 or 5
Chroma—3 or 4
Texture—loam or clay loam
Content of rock fragments—1 to 15 percent
Reaction—neutral to moderately alkaline

2C horizon:
Hue—10YR or 2.5Y
Value—4 to 6
Chroma—3 to 6
Texture—loam or clay loam
Content of rock fragments—1 to 15 percent
Reaction—slightly alkaline or moderately alkaline

56B2—Dana silt loam, 2 to 5 percent slopes, eroded

Setting

Landform: Ground moraines
Position on the landform: Backslopes and summits

Map Unit Composition

Dana and similar soils: 94 percent
Dissimilar soils: 6 percent

Soils of Minor Extent

Similar soils:
- Soils that are less gray in the lower part of the subsoil
- Soils that are grayer in the upper part of the subsoil
- Soils that are not eroded
- Soils that have carbonates at a shallower depth
- Soils that have a root-restrictive substratum

Dissimilar soils:
- The poorly drained Sable soils in swales

Properties and Qualities of the Dana Soil

Parent material: Loess over till
Drainage class: Moderately well drained

Slowest permeability within a depth of 40 inches: Moderate
Permeability below a depth of 60 inches: Moderately slow
Depth to restrictive feature: More than 80 inches
Available water capacity: About 8.9 inches to a depth of 60 inches
Content of organic matter in the surface layer: 1.5 to 3.5 percent
Shrink-swell potential: Moderate
Depth and months of highest perched seasonal high water table: 2 feet, February through April
Ponding: None
Flooding: None
Accelerated erosion: The surface layer has been thinned by erosion.
Potential for frost action: High
Hazard of corrosion: High for steel and moderate for concrete
Surface runoff class: Low
Susceptibility to water erosion: Moderate
Susceptibility to wind erosion: Low

Interpretive Groups

Land capability classification: 2e
Prime farmland category: Prime farmland
Hydric soil status: Not hydric

Denny Series

Taxonomic classification: Fine, smectitic, mesic Mollic Albaqualfs

Typical Pedon

Denny silt loam, 0 to 2 percent slopes, at an elevation of 722 feet above mean sea level; McDonough County, Illinois; 225 feet north and 1,680 feet east of the southwest corner of sec. 25, T. 7 N., R. 3 W.; USGS Good Hope, Illinois, topographic quadrangle; lat. 40 degrees 33 minutes 31 seconds N. and long. 90 degrees 41 minutes 15 seconds W.; UTM Zone 15T, 0695797E 4492335N; NAD 83:

Ap—0 to 8 inches; very dark gray (10YR 3/1) silt loam, gray (10YR 5/1) dry; weak fine granular structure; very friable; few very fine roots throughout; moderately acid; abrupt smooth boundary.
Eg1—8 to 14 inches; dark grayish brown (10YR 4/2) silt loam, light brownish gray (10YR 6/2) dry; weak thick platy structure parting to weak thin platy; very friable; few very fine roots throughout; few distinct very dark gray (10YR 3/1) organic coatings in root channels; common faint grayish brown (10YR 5/2) clay depletions on faces of peds; common fine prominent dark yellowish brown (10YR 3/6) masses of iron accumulation throughout; few fine black (N 2.5/) manganese concretions in the matrix; moderately acid; clear smooth boundary.
Eg2—14 to 21 inches; grayish brown (10YR 5/2) silt loam, light gray (10YR 7/2) dry; weak thick platy structure parting to moderate medium platy; friable; few very fine roots throughout; few distinct very dark gray (10YR 3/1) organic coatings in root channels; common fine faint dark brown (10YR 3/3) masses of iron accumulation throughout; common fine black (N 2.5/) manganese concretions in the matrix; moderately acid; abrupt smooth boundary.
Btg1—21 to 29 inches; grayish brown (10YR 5/2) silty clay loam; moderate fine and medium subangular blocky structure; firm; few very fine roots between peds; common distinct dark grayish brown (10YR 4/2) clay films on faces of peds; few distinct very dark gray (10YR 3/1) organic coatings in root channels; many fine prominent dark yellowish brown (10YR 4/6) and common fine distinct yellowish

brown (10YR 5/4) masses of iron accumulation throughout; common fine black (N 2.5/) manganese concretions in the matrix; moderately acid; clear smooth boundary.

Btg2—29 to 38 inches; grayish brown (10YR 5/2) silty clay loam; moderate medium prismatic structure parting to moderate medium subangular blocky; firm; few very fine roots between peds; common faint dark grayish brown (10YR 4/2) clay films on faces of peds; few distinct very dark gray (10YR 3/1) organic coatings in root channels; many fine prominent dark yellowish brown (10YR 4/6) and common fine prominent yellowish brown (10YR 5/8) masses of iron accumulation throughout; common fine black (N 2.5/) iron-manganese concretions in the matrix; moderately acid; gradual smooth boundary.

Btg3—38 to 46 inches; light brownish gray (2.5Y 6/2) silty clay loam; moderate coarse prismatic structure parting to moderate coarse subangular blocky; firm; very few fine roots between peds; common distinct dark grayish brown (10YR 4/2) clay films on faces of peds; few distinct very dark gray (10YR 3/1) organic coatings in root channels; many fine prominent dark yellowish brown (10YR 4/6) and common fine prominent strong brown (7.5YR 5/6) masses of iron accumulation throughout; common fine black (N 2.5/) manganese concretions in the matrix; moderately acid; gradual wavy boundary.

Cg1—46 to 63 inches; light brownish gray (2.5Y 6/2) silty clay loam; massive; firm; few very fine roots between peds; very few distinct very dark gray (10YR 3/1) organic coatings in root channels; many fine prominent dark yellowish brown (10YR 4/6) and common fine prominent strong brown (7.5YR 5/6) masses of iron accumulation throughout; few medium black (N 2.5/) manganese concretions in the matrix; slightly acid; diffuse wavy boundary.

Cg2—63 to 80 inches; light brownish gray (2.5Y 6/2) silt loam; massive; firm; very few distinct very dark gray (10YR 3/1) organic coatings in root channels; many fine prominent dark yellowish brown (10YR 4/6) and common fine prominent strong brown (7.5YR 5/6) masses of iron accumulation throughout; few medium black (N 2.5/) manganese concretions in the matrix; slightly acid.

Range in Characteristics

Thickness of the dark surface soil: 7 to 9 inches
Thickness of the loess: More than 60 inches
Depth to carbonates: More than 60 inches
Depth to the base of the argillic horizon: 40 to 65 inches

Ap or A horizon:
Hue—10YR
Value—2 or 3
Chroma—1 or 2
Texture—silt loam
Content of rock fragments—none
Reaction—moderately acid to neutral

Eg horizon:
Hue—10YR or 2.5Y
Value—4 to 6
Chroma—1 or 2
Texture—silt loam
Content of rock fragments—none
Reaction—moderately acid or slightly acid

Btg horizon:
Hue—10YR, 2.5Y, or 5Y
Value—4 to 6

Chroma—1 or 2
Texture—silty clay loam or silty clay
Content of rock fragments—none
Reaction—moderately acid or slightly acid in the upper part; ranging to slightly alkaline in the lower part

Cg horizon:
Hue—10YR, 2.5Y, or 5Y
Value—4 to 6
Chroma—1 or 2
Texture—silt loam or silty clay loam
Content of rock fragments—none
Reaction—slightly acid to slightly alkaline

45A—Denny silt loam, 0 to 2 percent slopes

Setting

Landform: Depressions

Map Unit Composition

Denny and similar soils: 94 percent
Dissimilar soils: 6 percent

Soils of Minor Extent

Similar soils:
- Soils that are less gray in the upper part of the subsoil

Dissimilar soils:
- The moderately well drained Buckhart soils; in positions above those of the Denny soil

Properties and Qualities of the Denny Soil

Parent material: Loess
Drainage class: Poorly drained
Slowest permeability within a depth of 40 inches: Slow
Permeability below a depth of 60 inches: Moderately slow
Depth to restrictive feature: 10 to 24 inches to an abrupt textural change
Available water capacity: About 11.5 inches to a depth of 60 inches
Content of organic matter in the surface layer: 2.0 to 3.0 percent
Shrink-swell potential: High
Depth and months of highest apparent seasonal high water table: At the surface, January through May
Duration and most likely period of ponding: Brief, January through May
Flooding: None
Potential for frost action: High
Hazard of corrosion: High for steel and moderate for concrete
Surface runoff class: Negligible
Susceptibility to water erosion: Low
Susceptibility to wind erosion: Low

Interpretive Groups

Land capability classification: 3w
Prime farmland category: Prime farmland where drained
Hydric soil status: Hydric

Edgington Series

Taxonomic classification: Fine-silty, mixed, superactive, mesic Argiaquic Argialbolls

Typical Pedon

Edgington silt loam, 0 to 2 percent slopes, at an elevation of 898 feet above mean sea level; Carroll County, Illinois; 222 feet west and 45 feet north of the southeast corner of the northeast quarter of sec. 5, T. 25 N., R. 7 E.; USGS Shannon, Illinois, topographic quadrangle; lat. 42 degrees 11 minutes 30.2 seconds N. and long. 89 degrees 42 minutes 31.4 seconds W.; UTM Zone 16T, 0276336E 4674615N; NAD 83:

A1—0 to 16 inches; black (10YR 2/1) silt loam; moderate medium granular structure; friable; many roots; slightly acid; gradual smooth boundary.

A2—16 to 20 inches; very dark brown (10YR 2/2) and very dark grayish brown (10YR 3/2) silt loam; moderate medium granular structure; friable; many roots; strongly acid; clear smooth boundary.

Eg—20 to 31 inches; dark grayish brown (10YR 4/2) and grayish brown (10YR 5/2) silt loam; weak medium platy structure parting to weak fine granular; friable; common roots; few fine distinct dark yellowish brown (10YR 4/4) masses of iron and manganese accumulation in the matrix; common fine prominent black (10YR 2/1) manganese nodules and concretions throughout; strongly acid; clear smooth boundary.

Btg1—31 to 35 inches; dark gray (5Y 4/1) silty clay loam; moderate fine subangular blocky structure; friable; few roots; few dark gray (10YR 4/1) clay films on faces of peds: few fine prominent yellowish brown (10YR 5/4) masses of iron and manganese accumulation in the matrix; common fine prominent black (10YR 2/1) manganese nodules and concretions throughout; strongly acid; gradual smooth boundary.

Btg2—35 to 41 inches; gray (10YR 5/1) silty clay loam; weak medium prismatic structure parting to moderate fine and medium angular blocky; firm; few roots; common faint dark gray (10YR 4/1) clay films on faces of peds; few fine distinct dark yellowish brown (10YR 4/4) iron and manganese accumulations and few fine prominent yellowish brown (10YR 5/6) masses of iron accumulation in the matrix; common fine prominent black (10YR 2/1) manganese nodules and concretions throughout; moderately acid; gradual smooth boundary.

Btg3—41 to 49 inches; gray (10YR 5/1) silty clay loam; weak medium and coarse prismatic structure parting to strong medium angular blocky; firm; few roots; common faint dark gray (10YR 4/1) clay films and very dark gray (10YR 3/1) organic clay films on faces of peds; common fine prominent dark brown (7.5YR 4/4) masses of iron and manganese accumulation and yellowish brown (10YR 5/6) masses of iron accumulation in the matrix; common fine prominent black (10YR 2/1) manganese nodules and concretions throughout; moderately acid; clear smooth boundary.

Btg4—49 to 55 inches; gray (10YR 5/1) and light brownish gray (10YR 6/2) silty clay loam; weak medium and coarse angular blocky structure; firm; few roots; common faint dark gray (10YR 4/1) clay films on faces of peds; many fine prominent dark brown (7.5YR 4/4) masses of iron and manganese accumulation and strong brown (7.5YR 5/6) masses of iron accumulation in the matrix; common fine prominent black (10YR 2/1) manganese nodules and concretions throughout; very dark gray (10YR 3/1) krotovina extending through the horizon; moderately acid; gradual smooth boundary.

Cg—55 to 60 inches; gray (10YR 5/1), yellowish brown (10YR 5/6), and light brownish gray (10YR 6/2) silt loam; massive; friable; few fine prominent dark brown (7.5YR 3/2) masses of iron and manganese accumulation in the matrix; slightly acid.

Range in Characteristics

Thickness of the mollic epipedon: 10 to 20 inches
Thickness of the loess: More than 60 inches
Depth to carbonates: More than 60 inches

Ap or A horizon:
Hue—10YR
Value—2 or 3
Chroma—1 or 2
Texture—silt loam
Content of rock fragments—none
Reaction—strongly acid to slightly acid

Eg horizon:
Hue—10YR
Value—4 or 5
Chroma—1 or 2
Texture—silt loam
Content of rock fragments—none
Reaction—strongly acid or moderately acid

Btg horizon:
Hue—10YR, 2.5Y, or 5Y
Value—4 to 6
Chroma—1 to 6
Texture—silty clay loam or silt loam
Content of rock fragments—none
Reaction—strongly acid to slightly acid

Cg horizon:
Hue—10YR, 2.5Y, or 5Y
Value—4 to 6
Chroma—1 to 6
Texture—silt loam or silty clay loam
Content of rock fragments—none
Reaction—slightly acid to slightly alkaline

272A—Edgington silt loam, 0 to 2 percent slopes

Setting

Landform: Ground moraines and depressions
Position on the landform: Toeslopes

Map Unit Composition

Edgington and similar soils: 90 percent
Dissimilar soils: 10 percent

Soils of Minor Extent

Similar soils:
- Soils that contain more sand in the subsoil
- Soils that are not subject to ponding

Dissimilar soils:
- Soils that are less gray in the subsoil

Properties and Qualities of the Edgington Soil

Parent material: Loess
Drainage class: Poorly drained
Slowest permeability within a depth of 40 inches: Moderately slow
Permeability below a depth of 60 inches: Moderate
Depth to restrictive feature: More than 80 inches
Available water capacity: About 12.3 inches to a depth of 60 inches
Content of organic matter in the surface layer: 4.5 to 6.0 percent
Shrink-swell potential: Moderate
Depth and months of highest apparent seasonal high water table: At the surface, January through May
Duration and most likely period of ponding: Brief, January through May
Flooding: None
Potential for frost action: High
Hazard of corrosion: High for steel and moderate for concrete
Surface runoff class: Negligible
Susceptibility to water erosion: Low
Susceptibility to wind erosion: Low

Interpretive Groups

Land capability classification: 2w
Prime farmland category: Prime farmland where drained
Hydric soil status: Hydric

Elburn Series

Taxonomic classification: Fine-silty, mixed, superactive, mesic Aquic Argiudolls

Typical Pedon

Elburn silt loam, 0 to 2 percent slopes, at an elevation of 617 feet above mean sea level; Christian County, Illinois; 2,716 feet north and 1,300 feet west of the southeast corner of sec. 36, T. 14 N., R. 1 E.; USGS Assumption, Illinois, topographic quadrangle; lat. 39 degrees 37 minutes 04.6 seconds N. and long. 89 degrees 01 minute 46.2 seconds W.; UTM Zone 16T, 0325795E 4387321N; NAD 83:

Ap—0 to 6 inches; very dark grayish brown (10YR 3/2) silt loam, grayish brown (10YR 5/2) dry; weak fine granular structure; friable; few very fine roots; many very dark gray (10YR 3/1) organic coatings on faces of peds; slightly acid; abrupt smooth boundary.

A—6 to 16 inches; very dark grayish brown (10YR 3/2) silt loam, grayish brown (10YR 5/2) dry; moderate fine granular structure; friable; few very fine roots; many very dark gray (10YR 3/1) organic coatings on faces of peds; neutral; clear smooth boundary.

Bt1—16 to 21 inches; brown (10YR 4/3) silty clay loam; moderate fine subangular blocky structure; friable; few very fine roots; many distinct very dark gray (10YR 3/1) organo-clay films and dark gray (10YR 4/1) clay films on faces of peds; few fine prominent yellowish brown (10YR 5/8) masses of iron accumulation and few fine faint brown (10YR 5/3) masses of iron and manganese accumulation in the matrix; few fine prominent iron-manganese concretions throughout; slightly acid; clear smooth boundary.

Bt2—21 to 28 inches; brown (10YR 5/3) silty clay loam; moderate fine subangular blocky structure; firm; few very fine roots; common distinct very dark gray (10YR 3/1) organo-clay films and common faint dark grayish brown (10YR 4/2) clay films on faces of peds; few fine faint grayish brown (10YR 5/2) iron depletions and few

fine distinct yellowish brown (10YR 5/6) masses of iron accumulation in the matrix; few fine prominent iron-manganese concretions throughout; neutral; clear smooth boundary.

Bt3—28 to 36 inches; brown (10YR 5/3) silty clay loam; moderate medium subangular blocky structure; firm; few very fine roots; common distinct very dark gray (10YR 3/1) organo-clay films and dark gray (10YR 4/1) clay films on faces of peds; common fine faint grayish brown (10YR 5/2) iron depletions and common fine distinct yellowish brown (10YR 5/6) masses of iron accumulation in the matrix; few fine prominent iron-manganese concretions throughout; neutral; clear smooth boundary.

Bt4—36 to 43 inches; light olive brown (2.5Y 5/4) silty clay loam; moderate medium subangular blocky structure; friable; few very fine roots; few prominent very dark gray (10YR 3/1) organo-clay films and few distinct brown (10YR 5/3) clay films on faces of peds; common medium distinct yellowish brown (10YR 5/6) and brownish yellow (10YR 6/6) masses of iron accumulation in the matrix; few fine prominent iron-manganese concretions throughout; slightly alkaline; clear smooth boundary.

Btg1—43 to 49 inches; grayish brown (2.5Y 5/2) silty clay loam; weak coarse subangular blocky structure; friable; few very fine roots; few distinct very dark gray (10YR 3/1) organo-clay films and dark grayish brown (10YR 4/2) clay films on faces of peds; many medium prominent brownish yellow (10YR 6/8) and few fine prominent yellowish brown (10YR 5/8) masses of iron accumulation in the matrix; few fine prominent iron-manganese concretions throughout; slightly alkaline; clear smooth boundary.

2Btg2—49 to 58 inches; grayish brown (2.5Y 5/2), stratified silt loam, loam, and sandy loam; weak coarse subangular blocky structure; friable; few very fine roots; few distinct very dark grayish brown (10YR 3/2) organo-clay films and dark grayish brown (10YR 4/2) clay films lining pores; common medium prominent brownish yellow (10YR 6/8) and few fine prominent yellowish brown (10YR 5/8) masses of iron accumulation in the matrix; few very fine iron-manganese concretions throughout; slightly alkaline; clear smooth boundary.

2Cg—58 to 62 inches; grayish brown (2.5Y 5/2), stratified sandy loam and loamy sand; single grain; very friable; common medium prominent yellowish brown (10YR 5/8) and brownish yellow (10YR 6/8) masses of iron accumulation in the matrix; slightly alkaline.

Range in Characteristics

Thickness of the mollic epipedon: 10 to 20 inches
Thickness of the loess: 40 to 60 inches
Depth to carbonates: More than 40 inches
Depth to the base of the argillic horizon: 40 to 70 inches

Ap or A horizon:
Hue—10YR
Value—2 or 3
Chroma—1 to 3
Texture—silt loam
Content of rock fragments—none
Reaction—moderately acid to neutral

Bt or Btg horizon:
Hue—10YR, 2.5Y, or 5Y
Value—4 or 5
Chroma—2 to 4
Texture—silty clay loam or silt loam

Content of rock fragments—none
Reaction—moderately acid to slightly alkaline

2Btg or 2Bt horizon:
Hue—10YR, 2.5Y, or 5Y
Value—4 to 6
Chroma—2 to 8
Texture—stratified silt loam, sandy loam, loam, or clay loam
Content of rock fragments—none
Reaction—slightly acid to slightly alkaline

2Cg or 2C horizon:
Hue—10YR, 2.5Y, or 5Y
Value—4 to 6
Chroma—2 to 8
Texture—stratified sandy loam, loamy sand, silt loam, or loam; stratified sand to loamy sand in the sandy substratum phase
Content of rock fragments—0 to 15 percent
Reaction—slightly acid to moderately alkaline

198A—Elburn silt loam, 0 to 2 percent slopes

Setting

Landform: Outwash plains and stream terraces
Position on the landform: Summits and footslopes

Map Unit Composition

Elburn and similar soils: 93 percent
Dissimilar soils: 7 percent

Soils of Minor Extent

Similar soils:
- Soils that have less sand in the substratum and/or in the underlying material
- Soils that have more clay in the subsoil

Dissimilar soils:
- The well drained Plano soils on slight rises; in positions above those of the Elburn soil
- The poorly drained Edgington and Sable soils in depressions or swales; in positions below those of the Elburn soil

Properties and Qualities of the Elburn Soil

Parent material: Loess over stratified loamy outwash
Drainage class: Somewhat poorly drained
Slowest permeability within a depth of 40 inches: Moderate
Permeability below a depth of 60 inches: Moderately rapid
Depth to restrictive feature: More than 80 inches
Available water capacity: About 11.4 inches to a depth of 60 inches
Content of organic matter in the surface layer: 3.5 to 5.0 percent
Shrink-swell potential: Moderate
Depth and months of highest apparent seasonal high water table: 1 foot, January through May
Ponding: None
Flooding: None
Potential for frost action: High

Hazard of corrosion: High for steel and moderate for concrete
Surface runoff class: Low
Susceptibility to water erosion: Low
Susceptibility to wind erosion: Low

Interpretive Groups

Land capability classification: 1
Prime farmland category: Prime farmland
Hydric soil status: Not hydric

726A—Elburn silt loam, sandy substratum, 0 to 2 percent slopes

Setting

Landform: Outwash plains
Position on the landform: Toeslopes

Map Unit Composition

Elburn and similar soils: 90 percent
Dissimilar soils: 10 percent

Soils of Minor Extent

Similar soils:
- Soils that are grayer in the upper part of the subsoil

Dissimilar soils:
- The well drained Plano soils on slight rises; in positions above those of the Elburn soil
- Soils that are not subject to flooding
- The poorly drained Sable soils in swales; in positions below those of the Elburn soil

Properties and Qualities of the Elburn Soil

Parent material: Loess over sandy outwash
Drainage class: Somewhat poorly drained
Slowest permeability within a depth of 40 inches: Moderate
Permeability below a depth of 60 inches: Rapid
Depth to restrictive feature: 40 to 60 inches to strongly contrasting textural stratification
Available water capacity: About 10.3 inches to a depth of 60 inches
Content of organic matter in the surface layer: 3.5 to 5.0 percent
Shrink-swell potential: Moderate
Depth and months of highest apparent seasonal high water table: 1 foot, January through May
Ponding: None
Flooding: None
Potential for frost action: High
Hazard of corrosion: High for steel and moderate for concrete
Surface runoff class: Low
Susceptibility to water erosion: Low
Susceptibility to wind erosion: Low

Interpretive Groups

Land capability classification: 1
Prime farmland category: Prime farmland
Hydric soil status: Not hydric

7198A—Elburn silt loam, 0 to 2 percent slopes, rarely flooded

Setting

Landform: Stream terraces and flood-plain steps

Map Unit Composition

Elburn and similar soils: 93 percent
Dissimilar soils: 7 percent

Soils of Minor Extent

Similar soils:
- Soils that have more sand in the substratum and/or in the underlying material
- Soils that have less sand and more clay in the subsoil
- Soils that are not subject to flooding

Dissimilar soils:
- The well drained Plano soils on slight rises; in positions above those of the Elburn soil
- The poorly drained Sawmill soils on flood plains; in positions below those of the Elburn soil

Properties and Qualities of the Elburn Soil

Parent material: Loess over loamy and sandy outwash
Drainage class: Somewhat poorly drained
Slowest permeability within a depth of 40 inches: Moderate
Permeability below a depth of 60 inches: Moderately rapid
Depth to restrictive feature: More than 80 inches
Available water capacity: About 11.4 inches to a depth of 60 inches
Content of organic matter in the surface layer: 3.5 to 5.0 percent
Shrink-swell potential: Moderate
Depth and months of highest apparent seasonal high water table: 1 foot, January through May
Ponding: None
Frequency and most likely period of flooding: Rare, November through June
Potential for frost action: High
Hazard of corrosion: High for steel and moderate for concrete
Surface runoff class: Low
Susceptibility to water erosion: Low
Susceptibility to wind erosion: Low

Interpretive Groups

Land capability classification: 1
Prime farmland category: Prime farmland
Hydric soil status: Not hydric

Harpster Series

Taxonomic classification: Fine-silty, mixed, superactive, mesic Typic Calciaquolls

Typical Pedon

Harpster silty clay loam, 0 to 2 percent slopes, at an elevation of 740 feet above mean sea level; Ford County, Illinois; 855 feet south and 70 feet west of the northeast corner of sec. 20, T. 23 N., R. 7 E.; USGS Gibson City West, Illinois, topographic quadrangle;

lat. 40 degrees 26 minutes 24.1 seconds N. and long. 88 degrees 25 minutes 23.2 seconds W.; UTM Zone 16T, 0379305E 4477571N; NAD 83:

Apk—0 to 9 inches; black (10YR 2/1) silty clay loam, dark gray (10YR 4/1) dry; weak fine granular structure; friable; common very fine roots; many snail shells; strongly effervescent (20 percent calcium carbonate); moderately alkaline; abrupt smooth boundary.

Ak—9 to 18 inches; very dark gray (10YR 3/1) silty clay loam, gray (10YR 5/1) dry; weak fine and medium granular structure; firm; common very fine roots; many snail shells; strongly effervescent (18 percent calcium carbonate); moderately alkaline; clear smooth boundary.

Bg1—18 to 25 inches; dark grayish brown (2.5Y 4/2) silty clay loam; weak fine and medium angular blocky structure; firm; common very fine roots; many distinct very dark gray (10YR 3/1) organic coatings on faces of peds; common fine distinct light olive brown (2.5Y 5/4) masses of iron and manganese accumulation in the matrix; few snail shells; slightly effervescent (7 percent calcium carbonate); moderately alkaline; gradual smooth boundary.

Bg2—25 to 31 inches; dark gray (5Y 4/1) silty clay loam; moderate medium prismatic structure parting to moderate fine and medium angular blocky; firm; few very fine roots; many distinct very dark gray (10YR 3/1) organic coatings on faces of peds; few fine prominent dark yellowish brown (10YR 4/4) and few fine distinct olive (5Y 4/4) masses of iron and manganese accumulation in the matrix; few snail shells; slightly effervescent (5 percent calcium carbonate); slightly alkaline; gradual smooth boundary.

Bg3—31 to 36 inches; dark gray (5Y 4/1) silty clay loam; weak coarse prismatic structure parting to weak medium angular blocky; firm; few very fine roots; common distinct very dark gray (10YR 3/1) organic coatings on faces of peds; common medium distinct olive (5Y 4/4) masses of iron and manganese accumulation and few fine prominent yellowish brown (10YR 5/6) masses of iron accumulation in the matrix; 2 percent gravel; slightly effervescent (2 percent calcium carbonate); slightly alkaline; gradual smooth boundary.

Bg4—36 to 41 inches; 40 percent olive brown (2.5Y 4/4), 35 percent olive yellow (2.5Y 6/6), and 25 percent gray (5Y 5/1) silty clay loam; weak coarse angular blocky structure; firm; few very fine roots; 2 percent gravel; slightly effervescent (2 percent calcium carbonate); slightly alkaline; gradual smooth boundary.

Cg1—41 to 56 inches; 55 percent gray (5Y 5/1), 40 percent light olive brown (2.5Y 5/6), and 5 percent dark yellowish brown (10YR 4/4) silt loam; massive; firm; 1 percent gravel; strongly effervescent (16 percent calcium carbonate); moderately alkaline; clear smooth boundary.

Cg2—56 to 60 inches; gray (10YR 5/1) loam; massive; friable; 5 percent gravel; strongly effervescent; moderately alkaline.

Range in Characteristics

Thickness of the mollic epipedon: 10 to 24 inches
Thickness of the loess or silty colluvium: 36 to 60 inches
Depth to carbonates: 0 to 8 inches
Depth to the base of the cambic horizon: 22 to 46 inches

Apk or Ak horizon:
Hue—10YR, 2.5Y, 5Y, or N
Value—2 or 3
Chroma—0 or 1
Texture—silty clay loam
Content of rock fragments—none
Reaction—slightly alkaline or moderately alkaline

Bg horizon:
Hue—10YR, 2.5Y, 5Y, or N
Value—3 to 6
Chroma—0 to 2
Texture—silty clay loam, silt loam, clay loam, or loam
Content of rock fragments—0 to 3 percent
Reaction—slightly alkaline or moderately alkaline

Cg horizon:
Hue—7.5YR, 10YR, 2.5Y, or 5Y
Value—4 to 6
Chroma—1 to 8
Texture—silt loam or loam
Content of rock fragments—0 to 3 percent
Reaction—slightly alkaline or moderately alkaline

67A—Harpster silty clay loam, 0 to 2 percent slopes

Setting

Landform: Outwash plains, ground moraines, lake plains, stream terraces, and depressions
Position on the landform: Toeslopes

Map Unit Composition

Harpster and similar soils: 97 percent
Dissimilar soils: 3 percent

Soils of Minor Extent

Similar soils:
- Soils that have a thicker dark surface layer
- Soils that do not have carbonates in the surface layer and in the upper part of the subsoil

Dissimilar soils:
- The somewhat poorly drained Ipava soils on slight rises

Properties and Qualities of the Harpster Soil

Parent material: Calcareous fine-silty colluvium over glacial drift
Drainage class: Poorly drained
Slowest permeability within a depth of 40 inches: Moderate
Permeability below a depth of 60 inches: Moderate
Depth to restrictive feature: More than 80 inches
Available water capacity: About 12.2 inches to a depth of 60 inches
Content of organic matter in the surface layer: 3.5 to 6.0 percent
Shrink-swell potential: Moderate
Depth and months of highest apparent seasonal high water table: At the surface, January through May
Duration and most likely period of ponding: Brief, January through May
Flooding: None
Potential for frost action: High
Hazard of corrosion: High for steel and low for concrete
Surface runoff class: Negligible
Susceptibility to water erosion: Low
Susceptibility to wind erosion: Moderate

Interpretive Groups

Land capability classification: 2w
Prime farmland category: Prime farmland where drained
Hydric soil status: Hydric

Hartsburg Series

Taxonomic classification: Fine-silty, mixed, superactive, mesic Typic Endoaquolls

Typical Pedon

Hartsburg silty clay loam, 0 to 2 percent slopes, at an elevation of 571 feet above mean sea level; Logan County, Illinois; 660 feet west and 40 feet north of the southeast corner of sec. 23, T. 21 N., R. 4 W.; USGS New Holland, Illinois, topographic quadrangle; lat. 40 degrees 14 minutes 58.2 seconds N. and long. 89 degrees 31 minutes 28.4 seconds W.; UTM Zone 16T, 0285280E 4458507N; NAD 83:

Ap—0 to 7 inches; black (10YR 2/1) silty clay loam, dark gray (10YR 4/1) dry; moderate medium granular structure; friable; slightly acid; abrupt smooth boundary.

A1—7 to 12 inches; black (10YR 2/1) silty clay loam, dark gray (10YR 4/1) dry; moderate medium granular structure; friable; few very fine roots; slightly acid; clear smooth boundary.

A2—12 to 17 inches; very dark gray (10YR 3/1) silty clay loam, gray (10YR 5/1) dry; moderate medium granular structure; firm; few very fine roots; few fine rounded black (7.5YR 2.5/1) weakly cemented iron and manganese oxide concretions with diffuse boundaries along root channels and pores; few fine faint dark grayish brown (2.5Y 4/2) iron depletions in the matrix; neutral; clear smooth boundary.

Bg—17 to 21 inches; dark grayish brown (2.5Y 4/2) silty clay loam; weak fine and medium subangular blocky structure; firm; few very fine roots; common distinct very dark gray (10YR 3/1) organic coatings on faces of peds; few fine rounded black (7.5YR 2.5/1) weakly cemented iron and manganese oxide concretions with diffuse boundaries lining root channels and pores; common fine prominent yellowish brown (10YR 5/6) masses of iron accumulation in the matrix; common very dark gray (10YR 3/1) krotovinas; neutral; clear smooth boundary.

Bkg—21 to 30 inches; gray (5Y 5/1) silty clay loam; moderate medium subangular blocky structure; firm; few very fine roots; common distinct dark grayish brown (10YR 4/2) and grayish brown (2.5Y 5/2) pressure faces on faces of peds; few fine rounded black (7.5YR 2.5/1) weakly cemented iron and manganese oxide concretions with diffuse boundaries lining root channels and pores; common medium prominent yellowish brown (10YR 5/8) and strong brown (7.5YR 5/8) masses of iron accumulation in the matrix; few fine and medium rounded white (10YR 8/1) weakly cemented calcium carbonate concretions throughout; slightly effervescent; common very dark gray (10YR 3/1) krotovinas; slightly alkaline; abrupt wavy boundary.

BCkg—30 to 34 inches; light brownish gray (2.5Y 6/2) silty clay loam; weak coarse subangular blocky structure; firm; many distinct gray (N 5/) and grayish brown (2.5Y 5/2) linings in pores and root channels; few fine rounded black (7.5YR 2.5/1) weakly cemented iron and manganese oxide concretions with diffuse boundaries lining pores; many medium prominent yellowish brown (10YR 5/8) masses of iron accumulation in the matrix; many medium and coarse rounded white (10YR 8/1) weakly cemented calcium carbonate concretions throughout; violently effervescent among concretions, slightly effervescent in the matrix; common very dark gray (10YR 3/1) krotovinas; slightly alkaline; clear wavy boundary.

Cg—34 to 60 inches; light brownish gray (2.5Y 6/2) silt loam; massive; friable; many medium prominent strong brown (7.5YR 5/8) masses of iron accumulation with diffuse boundaries lining pores; few medium rounded white (10YR 8/1) weakly cemented calcium carbonate concretions throughout; strongly effervescent; common very dark gray (10YR 3/1) krotovinas; moderately alkaline.

Range in Characteristics

Thickness of the mollic epipedon: 10 to 20 inches
Thickness of the loess: More than 40 inches
Depth to carbonates: 15 to 35 inches
Depth to the base of the cambic horizon: 24 to 50 inches

Ap and A horizons:
Hue—10YR or N
Value—2 or 3
Chroma—0 to 2
Texture—silty clay loam
Content of rock fragments—none
Reaction—slightly acid to slightly alkaline

Bg, Bkg, and BCkg horizons:
Hue—10YR, 2.5Y, or 5Y
Value—3 to 6
Chroma—1 or 2
Texture—silty clay loam or silt loam
Content of rock fragments—none
Reaction—neutral to moderately alkaline

Cg horizon:
Hue—10YR, 2.5Y, or 5Y
Value—5 or 6
Chroma—1 or 2
Texture—silt loam or loam
Content of rock fragments—0 to 7 percent
Reaction—slightly alkaline or moderately alkaline

244A—Hartsburg silty clay loam, 0 to 2 percent slopes

Setting

Landform: Outwash plains and ground moraines
Position on the landform: Toeslopes

Map Unit Composition

Hartsburg and similar soils: 95 percent
Dissimilar soils: 5 percent

Soils of Minor Extent

Similar soils:
- The poorly drained Harpster soils in depressions

Dissimilar soils:
- The moderately well drained Catlin soils on slight rises; in positions above those of the Hartsburg soil

Properties and Qualities of the Hartsburg Soil

Parent material: Loess over silty lacustrine deposits
Drainage class: Poorly drained
Slowest permeability within a depth of 40 inches: Moderate
Permeability below a depth of 60 inches: Moderate
Depth to restrictive feature: More than 80 inches
Available water capacity: About 10.2 inches to a depth of 60 inches
Content of organic matter in the surface layer: 4.5 to 6.0 percent
Shrink-swell potential: Moderate
Depth and months of highest apparent seasonal high water table: At the surface, January through May
Duration and most likely period of ponding: Brief, January through May
Flooding: None
Potential for frost action: High
Hazard of corrosion: High for steel and low for concrete
Surface runoff class: Negligible
Susceptibility to water erosion: Low
Susceptibility to wind erosion: Low

Interpretive Groups

Land capability classification: 2w
Prime farmland category: Prime farmland where drained
Hydric soil status: Hydric

Hennepin Series

Taxonomic classification: Fine-loamy, mixed, active, mesic Typic Eutrudepts

Typical Pedon

Hennepin silt loam, 18 to 35 percent slopes, on a slope of 27 percent at an elevation of 733 feet above mean sea level; McLean County, Illinois; 1,650 feet east and 264 feet north of the southwest corner of sec. 17, T. 25 N., R. 2 E.; USGS Normal West, Illinois, topographic quadrangle; lat. 40 degrees 37 minutes 17.7 seconds N. and long. 89 degrees 01 minute 01.3 seconds W.; UTM Zone 16T, 0329393E 4498705N; NAD 83:

A—0 to 6 inches; very dark grayish brown (10YR 3/2) silt loam; weak fine and medium subangular blocky structure; friable; 1 percent gravel; slightly alkaline; clear smooth boundary.

Bw1—6 to 12 inches; brown (10YR 4/3) loam; moderate fine and medium subangular blocky structure; friable; few faint very dark grayish brown (10YR 3/2) organo-clay films on faces of peds; few fine prominent irregular masses of iron-manganese accumulation throughout; 1 percent gravel; slightly alkaline; clear smooth boundary.

Bw2—12 to 19 inches; olive brown (2.5Y 4/4) loam; moderate fine and medium subangular blocky structure; friable; few fine prominent irregular masses of iron-manganese accumulation throughout; 1 percent gravel; slightly effervescent; moderately alkaline; clear smooth boundary.

C—19 to 60 inches; olive brown (2.5Y 4/4) loam; massive; firm; few fine prominent irregular masses of iron-manganese accumulation throughout; 1 percent gravel; strongly effervescent; moderately alkaline.

Range in Characteristics

Depth to carbonates: 0 to 15 inches

Ap or A horizon:
Hue—7.5YR or 10YR
Value—3 to 5
Chroma—1 to 4
Texture—silt loam
Content of rock fragments—0 to 10 percent
Reaction—slightly acid to moderately alkaline

Bw horizon:
Hue—7.5YR or 10YR
Value—4 or 5
Chroma—3 or 4
Texture—clay loam, loam, silt loam, or sandy loam
Content of rock fragments—0 to 15 percent
Reaction—slightly acid to moderately alkaline

C horizon:
Hue—7.5YR, 10YR, or 2.5Y
Value—4 to 6
Chroma—2 to 4
Texture—loam, silt loam, clay loam, or sandy loam
Content of rock fragments—3 to 15 percent
Reaction—slightly alkaline or moderately alkaline

964F—Miami and Hennepin soils, 18 to 35 percent slopes

Setting

Landform: End moraines
Position on the landform: Backslopes

Map Unit Composition

Miami and similar soils: 0 to 90 percent
Hennepin and similar soils: 0 to 90 percent
Dissimilar soils: 10 percent

Soils of Minor Extent

Similar soils:
- Soils that are grayer in the lower part of the subsoil and in the substratum
- Soils that have carbonates at a depth of more than 40 inches
- Soils that have a surface layer of silt loam
- Soils that have less sand and gravel in the subsoil and substratum
- Soils that have a darker surface layer

Dissimilar soils:
- The somewhat poorly drained Lawson soils in drainageways; in positions below those of the Miami and Hennepin soils
- The poorly drained Sawmill soils on flood plains; in positions below those of the Miami and Hennepin soils

Properties and Qualities of the Miami Soil

Parent material: Till
Drainage class: Moderately well drained

Slowest permeability within a depth of 40 inches: Moderately slow
Permeability below a depth of 60 inches: Moderate
Depth to restrictive feature: 24 to 40 inches to dense material
Available water capacity: About 6.9 inches to a depth of 60 inches
Content of organic matter in the surface layer: 1.0 to 2.5 percent
Shrink-swell potential: Moderate
Depth and months of highest perched seasonal high water table: 2 feet, February through April
Ponding: None
Flooding: None
Potential for frost action: Moderate
Hazard of corrosion: High for steel and moderate for concrete
Surface runoff class: High
Susceptibility to water erosion: High
Susceptibility to wind erosion: Low

Properties and Qualities of the Hennepin Soil

Parent material: Till
Drainage class: Well drained
Slowest permeability within a depth of 40 inches: Moderately slow
Permeability below a depth of 60 inches: Moderately slow
Depth to restrictive feature: More than 80 inches
Available water capacity: About 6.7 inches to a depth of 60 inches
Content of organic matter in the surface layer: 1.0 to 2.5 percent
Shrink-swell potential: Low
Ponding: None
Flooding: None
Potential for frost action: Moderate
Hazard of corrosion: Low for steel and concrete
Surface runoff class: High
Susceptibility to water erosion: High
Susceptibility to wind erosion: Low

Interpretive Groups

Land capability classification: Miami—6e; Hennepin—6e
Prime farmland category: Not prime farmland
Hydric soil status: Miami—not hydric; Hennepin—not hydric

Ipava Series

Taxonomic classification: Fine, smectitic, mesic Aquic Argiudolls

Typical Pedon

Ipava silt loam, 0 to 2 percent slopes, at an elevation of 804 feet above mean sea level; Knox County, Illinois; 2,046 feet west and 594 feet north of the southeast corner of sec. 25, T. 13 N., R. 2 E.; USGS Oneida, Illinois, topographic quadrangle; lat. 41 degrees 04 minutes 40.1 seconds N. and long. 90 degrees 13 minutes 03.4 seconds W.; UTM Zone 15T, 0733739E 4551126N; NAD 83:

Ap—0 to 10 inches; black (10YR 2/1) silt loam, dark gray (10YR 4/1) dry; moderate fine and medium subangular blocky structure; friable; moderately acid; abrupt smooth boundary.
A—10 to 18 inches; very dark grayish brown (10YR 3/2) silty clay loam, grayish brown (10YR 5/2) dry; weak fine and medium subangular blocky structure; friable;

common distinct black (10YR 2/1) organic coatings on faces of peds; moderately acid; clear smooth boundary.

BA—18 to 24 inches; brown (10YR 4/3) silty clay loam; moderate fine and medium subangular blocky structure; friable; common distinct very dark gray (10YR 3/1) organic coatings on faces of peds; few fine distinct light brownish gray (2.5Y 6/2) iron depletions in the matrix; few fine distinct yellowish brown (10YR 5/6) masses of iron accumulation in the matrix; moderately acid; clear smooth boundary.

Btg1—24 to 31 inches; dark grayish brown (10YR 4/2) silty clay; moderate fine prismatic structure parting to moderate fine subangular blocky; friable; common faint dark gray (10YR 4/1) clay films on faces of peds; few fine distinct light brownish gray (2.5Y 6/2) iron depletions in the matrix; common fine prominent yellowish brown (10YR 5/8) masses of iron accumulation in the matrix; slightly acid; clear smooth boundary.

Btg2—31 to 37 inches; grayish brown (2.5Y 5/2) silty clay loam; moderate medium prismatic structure parting to moderate medium angular blocky; friable; common distinct dark gray (10YR 4/1) clay films on faces of peds; few fine prominent black (7.5YR 2.5/1) iron and manganese stains on faces of peds; common fine faint light brownish gray (2.5Y 6/2) iron depletions in the matrix; common medium prominent strong brown (7.5YR 5/8) masses of iron accumulation in the matrix; few fine prominent black (7.5YR 2.5/1) very weakly cemented iron-manganese concretions throughout; slightly alkaline; gradual smooth boundary.

BCg—37 to 50 inches; grayish brown (2.5Y 5/2) silty clay loam; moderate medium prismatic structure parting to moderate medium angular blocky; friable; few distinct very dark grayish brown (10YR 3/2) organo-clay films lining pores and on a few vertical faces of peds; common fine black (7.5YR 2.5/1) iron and manganese oxide stains on faces of peds; common fine faint light brownish gray (2.5Y 6/2) iron depletions in the matrix; common fine prominent strong brown (7.5YR 5/8) masses of iron accumulation in the matrix; few fine prominent black (7.5YR 2.5/1) very weakly cemented iron-manganese concretions throughout; slightly alkaline; clear smooth boundary.

Cg—50 to 60 inches; light brownish gray (2.5Y 6/2) silt loam; massive; friable; few faint very dark grayish brown (10YR 3/2) organo-clay films occurring as linings in pores; few fine prominent black (7.5YR 2.5/1) iron and manganese stains on faces of vertical cracks; common fine prominent yellowish brown (10YR 5/8) masses of iron accumulation in the matrix; few fine prominent black (7.5YR 2.5/1) very weakly cemented iron-manganese concretions throughout; moderately alkaline.

Range in Characteristics

Thickness of the mollic epipedon: 10 to 20 inches
Thickness of the loess: More than 60 inches
Depth to carbonates: More than 40 inches
Depth to the base of the argillic horizon: 35 to 55 inches

Ap and A horizons:
Hue—10YR
Value—2 or 3
Chroma—1 or 2
Texture—silt loam or silty clay loam
Content of rock fragments—none
Reaction—moderately acid to neutral

BA, Bt, Btg, or BCg horizon:
Hue—10YR or 2.5Y
Value—3 to 6

Chroma—2 to 4
Texture—silty clay loam, silt loam, or silty clay
Content of rock fragments—none
Reaction—moderately acid to slightly alkaline

Cg horizon:
Hue—10YR or 2.5Y
Value—5 or 6
Chroma—1 to 4
Texture—silt loam
Content of rock fragments—none
Reaction—slightly acid to moderately alkaline

43A—Ipava silt loam, 0 to 2 percent slopes

Setting

Landform: Ground moraines
Position on the landform: Summits and footslopes

Map Unit Composition

Ipava and similar soils: 88 percent
Dissimilar soils: 12 percent

Soils of Minor Extent

Similar soils:
- Soils that are less gray in the lower part of the subsoil
- Soils that have less clay in the subsoil
- Soils that have more sand in the substratum and/or in the underlying material

Dissimilar soils:
- The well drained Osco soils in positions on slopes above those of the Ipava soil
- The poorly drained Denny and Sable soils in depressions or swales; in positions below those of the Ipava soil

Properties and Qualities of the Ipava Soil

Parent material: Loess
Drainage class: Somewhat poorly drained
Slowest permeability within a depth of 40 inches: Moderately slow
Permeability below a depth of 60 inches: Moderate
Depth to restrictive feature: More than 80 inches
Available water capacity: About 11.6 inches to a depth of 60 inches
Content of organic matter in the surface layer: 3.5 to 5.0 percent
Shrink-swell potential: High
Depth and months of highest apparent seasonal high water table: 1 foot, January through May
Ponding: None
Flooding: None
Potential for frost action: High
Hazard of corrosion: High for steel and moderate for concrete
Surface runoff class: Low
Susceptibility to water erosion: Low
Susceptibility to wind erosion: Low

Interpretive Groups

Land capability classification: 1
Prime farmland category: Prime farmland
Hydric soil status: Not hydric

Kaneville Series

Taxonomic classification: Fine-silty, mixed, superactive, mesic Mollic Oxyaquic Hapludalfs

Typical Pedon

Kaneville silt loam, 2 to 5 percent slopes, on a slope of 3 percent at an elevation of 721 feet above mean sea level; McLean County, Illinois; 3,100 feet north and 2,850 feet east of the southwest corner of sec. 4, T. 25 N., R. 3 E.; USGS Lexington, Illinois, topographic quadrangle; lat. 40 degrees 39 minutes 25.7 seconds N. and long. 88 degrees 52 minutes 28.4 seconds W.; UTM Zone 16T, 0341528E 4502385N; NAD 83:

Ap—0 to 7 inches; very dark grayish brown (10YR 3/2) silt loam, grayish brown (10YR 5/2) dry; weak fine granular structure; friable; slightly acid; abrupt smooth boundary.

E—7 to 11 inches; brown (10YR 4/3) silt loam; weak thin platy structure; friable; few faint dark brown (10YR 3/3) organo-clay films on faces of peds; slightly acid; clear smooth boundary.

Bt1—11 to 23 inches; dark yellowish brown (10YR 4/4) silty clay loam; moderate medium subangular blocky structure; friable; common faint brown (10YR 4/3) clay films on faces of peds; slightly acid; clear smooth boundary.

Bt2—23 to 31 inches; dark yellowish brown (10YR 4/4) silty clay loam; moderate medium prismatic structure parting to moderate medium subangular blocky; friable; few faint brown (10YR 4/3) clay films on faces of peds; few fine distinct yellowish brown (10YR 5/6) masses of iron accumulation in the matrix; moderately acid; clear smooth boundary.

Bt3—31 to 46 inches; dark yellowish brown (10YR 4/6) silty clay loam; moderate medium prismatic structure; friable; few faint brown (10YR 4/3) clay films on faces of peds; few fine prominent dark gray (10YR 4/1) iron depletions and few fine faint yellowish brown (10YR 5/6) masses of iron accumulation in the matrix; moderately acid; clear smooth boundary.

2Bt4—46 to 50 inches; dark yellowish brown (10YR 4/6) loam; weak medium prismatic structure; friable; few faint brown (10YR 4/3) clay films on faces of peds; few fine prominent dark gray (10YR 4/1) iron depletions and few fine faint yellowish brown (10YR 5/6) masses of iron accumulation in the matrix; slightly acid; clear smooth boundary.

2C—50 to 60 inches; dark yellowish brown (10YR 4/6) sandy loam; massive; friable; neutral.

Range in Characteristics

Thickness of the dark surface soil: 7 to 9 inches
Thickness of the loess: 40 to 60 inches
Depth to carbonates: More than 40 inches
Depth to the base of the argillic horizon: 40 to 70 inches

Ap or A horizon:
Hue—10YR
Value—2 or 3

Chroma—1 to 3
Texture—silt loam
Content of rock fragments—none
Reaction—slightly acid or neutral

E horizon (not in all pedons):
Hue—10YR
Value—4 to 6
Chroma—2 or 3
Texture—silt loam
Content of rock fragments—none
Reaction—slightly acid or neutral

Bt horizon:
Hue—10YR
Value—4 or 5
Chroma—3 to 6
Texture—silty clay loam or silt loam
Content of rock fragments—none
Reaction—moderately acid to neutral

2Bt horizon:
Hue—10YR
Value—4 or 5
Chroma—3 to 6
Texture—loam, sandy loam, or silt loam; stratified in some pedons
Content of rock fragments—0 to 10 percent
Reaction—slightly acid to moderately alkaline

2C horizon:
Hue—10YR or 2.5Y
Value—4 to 6
Chroma—3 to 6
Texture—sandy loam, loam, or silt loam; stratified in some pedons
Content of rock fragments—0 to 10 percent
Reaction—slightly acid to moderately alkaline

667B—Kaneville silt loam, 2 to 5 percent slopes

Setting

Landform: Stream terraces
Position on the landform: Summits

Map Unit Composition

Kaneville and similar soils: 90 percent
Dissimilar soils: 10 percent

Soils of Minor Extent

Similar soils:
- Soils that are less gray in the lower part of the subsoil
- Soils that have a thick dark surface layer
- Soils that have more sand and gravel in the substratum and/or in the underlying material

Dissimilar soils:
- The somewhat poorly drained Lawson soils on flood plains; in positions below those of the Kaneville soil
- The poorly drained Edgington soils in depressions

Properties and Qualities of the Kaneville Soil

Parent material: Loess over stratified loamy outwash
Drainage class: Moderately well drained
Slowest permeability within a depth of 40 inches: Moderate
Permeability below a depth of 60 inches: Moderately rapid
Depth to restrictive feature: More than 80 inches
Available water capacity: About 10.6 inches to a depth of 60 inches
Content of organic matter in the surface layer: 1.5 to 3.5 percent
Shrink-swell potential: Moderate
Depth and months of highest apparent seasonal high water table: 2 feet, February through April
Ponding: None
Flooding: None
Potential for frost action: High
Hazard of corrosion: High for steel and moderate for concrete
Surface runoff class: Low
Susceptibility to water erosion: Moderate
Susceptibility to wind erosion: Low

Interpretive Groups

Land capability classification: 2e
Prime farmland category: Prime farmland
Hydric soil status: Not hydric

Kendall Series

Taxonomic classification: Fine-silty, mixed, superactive, mesic Aeric Endoaqualfs

Typical Pedon

Kendall silt loam, 0 to 2 percent slopes, rarely flooded, at an elevation of 548 feet above mean sea level; Sangamon County, Illinois; 240 feet south and 1,010 feet west of the northeast corner of sec. 4, T. 15 N., R. 4 W.; USGS Springfield East, Illinois, topographic quadrangle; lat. 39 degrees 47 minutes 13.9 seconds N. and long. 89 degrees 32 minutes 27.2 seconds W.; UTM Zone 16S, 0282427E 4407226N; NAD 83:

Ap—0 to 9 inches; dark grayish brown (10YR 4/2) silt loam; moderate fine granular structure; friable; few fine roots; few fine distinct black (10YR 2/1) masses of manganese accumulation and dark yellowish brown (10YR 4/4) masses of iron and manganese accumulation; strongly acid; clear smooth boundary.

E—9 to 14 inches; grayish brown (10YR 5/2) silt loam; moderate thin platy structure; friable; few fine roots; few fine distinct black (10YR 2/1) masses of manganese accumulation and dark yellowish brown (10YR 4/4) masses of iron and manganese accumulation; strongly acid; clear smooth boundary.

Bt1—14 to 18 inches; brown (10YR 4/3) silty clay loam; moderate fine subangular blocky structure; firm; few fine roots; common faint grayish brown (10YR 5/2) clay films on faces of peds; many prominent light gray (10YR 7/1) uncoated sand grains; few fine faint grayish brown (10YR 5/2) iron depletions; few fine distinct black (10YR 2/1) masses of manganese accumulation; strongly acid; clear smooth boundary.

Bt2—18 to 24 inches; brown (10YR 5/3) silty clay loam; moderate fine and medium subangular blocky structure; firm; few fine roots; common distinct grayish brown (10YR 5/2) clay films on faces of peds; common distinct light gray (10YR 7/1) uncoated sand grains; common medium faint dark yellowish brown (10YR 4/4) masses of iron and manganese accumulation; few fine distinct black (10YR 2/1) masses of manganese accumulation; strongly acid; clear smooth boundary.

Btg1—24 to 32 inches; grayish brown (10YR 5/2) silty clay loam; moderate medium prismatic structure parting to weak medium subangular blocky; firm; few fine roots; few faint grayish brown (10YR 5/2) clay films on faces of peds; common distinct light gray (10YR 7/1) uncoated silt and sand grains; common medium prominent yellowish brown (10YR 5/6) masses of iron accumulation; many medium distinct yellowish brown (10YR 5/4) and few fine distinct brown (7.5YR 4/4) masses of iron and manganese accumulation; few fine distinct very dark gray (10YR 3/1) masses of manganese accumulation; very strongly acid; gradual smooth boundary.

Btg2—32 to 41 inches; grayish brown (10YR 5/2) silty clay loam; moderate medium prismatic structure; firm; common distinct light gray (10YR 7/1) uncoated silt and sand grains; common medium prominent yellowish brown (10YR 5/6) masses of iron accumulation; few fine distinct dark brown (7.5YR 4/4) masses of iron and manganese accumulation; few fine distinct very dark gray (10YR 3/1) masses of manganese accumulation; dark grayish brown (10YR 4/2) channel fillings; strongly acid; gradual smooth boundary.

BCg—41 to 54 inches; grayish brown (10YR 5/2) silty clay loam; weak coarse prismatic structure; firm; few fine faint gray (10YR 6/1) iron depletions; common medium distinct yellowish brown (10YR 5/4) and few fine distinct brown (7.5YR 4/4) masses of iron and manganese accumulation; dark grayish brown (10YR 4/2) channel fillings; slightly acid; gradual smooth boundary.

2Cg—54 to 60 inches; mixed grayish brown (10YR 5/2), yellowish brown (10YR 5/4), and gray (10YR 6/1), stratified clay loam, loam, and sandy loam; massive; friable; neutral.

Range in Characteristics

Thickness of the loess: 40 to 60 inches
Depth to carbonates: More than 40 inches
Depth to the base of the argillic horizon: More than 40 inches

Ap horizon:
Hue—10YR
Value—4 or 5
Chroma—1 to 3
Texture—silt loam
Content of rock fragments—none
Reaction—strongly acid to neutral

E or Eg horizon:
Hue—10YR or 2.5Y
Value—4 to 7
Chroma—2 to 6
Texture—silt loam
Content of rock fragments—none
Reaction—strongly acid to neutral

BE horizon (where present):
Hue—7.5YR, 10YR, or 2.5Y
Value—4 to 6
Chroma—2 to 6
Texture—silt loam or silty clay loam

Content of rock fragments—none
Reaction—very strongly acid to slightly acid

Bt, Btg, and BCg horizons:
Hue—7.5YR, 10YR, 2.5Y, or 5Y
Value—4 to 6
Chroma—1 to 8
Texture—silty clay loam
Content of rock fragments—none
Reaction—very strongly acid to neutral

2Bt, 2Btg, 2BC, or 2BCg horizon (where present):
Hue—7.5YR, 10YR, 2.5Y, or 5Y
Value—4 to 6
Chroma—1 to 8
Texture—loam, clay loam, silt loam, or sandy loam
Content of rock fragments—0 to 15 percent
Reaction—strongly acid to slightly alkaline

2C or 2Cg horizon:
Hue—7.5YR, 10YR, 2.5Y, or 5Y
Value—4 to 6
Chroma—1 to 8
Texture—silt loam, loam, clay loam, silty clay loam, or sandy loam (stratified)
Content of rock fragments—0 to 15 percent
Reaction—moderately acid to moderately alkaline

7242A—Kendall silt loam, 0 to 2 percent slopes, rarely flooded

Setting

Landform: Flood-plain steps and stream terraces

Map Unit Composition

Kendall and similar soils: 88 percent
Dissimilar soils: 12 percent

Soils of Minor Extent

Similar soils:
- Soils that have more sand in the substratum and/or in the underlying material
- Soils that have more clay in the subsoil
- Soils that have a darker surface layer
- Soils that are not subject to flooding

Dissimilar soils:
- The frequently flooded Lawson soils on flood plains; in positions below those of the Kendall soil
- The poorly drained Sawmill soils on flood plains; in positions below those of the Kendall soil

Properties and Qualities of the Kendall Soil

Parent material: Loess or other silty material over outwash
Drainage class: Somewhat poorly drained
Slowest permeability within a depth of 40 inches: Moderate
Permeability below a depth of 60 inches: Moderate or moderately rapid

Depth to restrictive feature: More than 80 inches
Available water capacity: About 11.7 inches to a depth of 60 inches
Content of organic matter in the surface layer: 1.0 to 3.0 percent
Shrink-swell potential: Moderate
Depth and months of highest apparent seasonal high water table: 0.5 foot, January through May
Ponding: None
Frequency and most likely period of flooding: Rare, November through June
Potential for frost action: High
Hazard of corrosion: High for steel and concrete
Surface runoff class: Low
Susceptibility to water erosion: Low
Susceptibility to wind erosion: Low

Interpretive Groups

Land capability classification: 2w
Prime farmland category: Prime farmland where drained
Hydric soil status: Not hydric

Keomah Series

Taxonomic classification: Fine, smectitic, mesic Aeric Endoaqualfs

Typical Pedon

Keomah silt loam, 0 to 2 percent slopes, at an elevation of 655 feet above mean sea level; Adams County, Illinois; 2,495 feet south and 300 feet west of the northeast corner of sec. 4, T. 2 N., R. 7 W.; USGS Loraine, Illinois, topographic quadrangle; lat. 40 degrees 11 minutes 23.5 seconds N. and long. 91 degrees 12 minutes 13.7 seconds W.; UTM Zone 15T, 0652902E 4450377N; NAD 83:

Ap1—0 to 6 inches; dark grayish brown (10YR 4/2) silt loam, light brownish gray (10YR 6/2) dry; weak thick platy structure parting to weak fine subangular blocky; friable; many very fine and fine roots; moderately acid; abrupt smooth boundary.

Ap2—6 to 11 inches; dark grayish brown (10YR 4/2) silt loam, light brownish gray (10YR 6/2) dry; weak medium platy structure parting to weak fine subangular blocky; friable; common very fine and fine roots; few prominent brown (7.5YR 4/4) masses of iron and manganese accumulation lining pores; moderately acid; abrupt smooth boundary.

E—11 to 18 inches; grayish brown (10YR 5/2) silt loam, light gray (10YR 7/2) dry; weak medium platy structure parting to weak fine subangular blocky; friable; common fine roots; few faint dark grayish brown (10YR 4/2) organic coatings on faces of peds and in pores; few faint light gray (10YR 7/2) clay depletions throughout; common fine prominent strong brown (7.5YR 5/6) masses of iron accumulation in the matrix; few fine prominent black (2.5Y 2.5/1) masses of manganese accumulation throughout; slightly acid; clear smooth boundary.

Bt1—18 to 25 inches; brown (10YR 5/3) silty clay loam; weak medium prismatic structure parting to moderate fine subangular blocky; firm; common fine roots; many distinct grayish brown (10YR 5/2) clay films on faces of peds; few fine faint grayish brown (10YR 5/2) iron depletions throughout; many fine prominent strong brown (7.5YR 5/6) masses of iron accumulation in the matrix; common fine prominent black (2.5Y 2.5/1) masses of manganese accumulation throughout; strongly acid; clear smooth boundary.

Bt2—25 to 33 inches; brown (10YR 5/3) silty clay loam; weak medium prismatic structure parting to moderate medium subangular blocky; firm; few fine roots;

many distinct grayish brown (10YR 5/2) clay films on faces of peds and few faint pressure faces; many fine prominent strong brown (7.5YR 5/6) masses of iron accumulation in the matrix; common fine prominent black (2.5Y 2.5/1) masses of manganese accumulation throughout; strongly acid; clear smooth boundary.

Bt3—33 to 44 inches; brown (10YR 5/3) silty clay loam; weak medium prismatic structure parting to moderate medium subangular blocky; firm; few very fine roots; common distinct grayish brown (10YR 5/2) clay films on faces of peds; common fine faint light brownish gray (10YR 6/2) iron depletions throughout; many fine prominent strong brown (7.5YR 5/6) masses of iron accumulation in the matrix; common fine prominent black (2.5Y 2.5/1) masses of manganese accumulation throughout; moderately acid; clear smooth boundary.

Btg—44 to 51 inches; light brownish gray (10YR 6/2) silty clay loam; weak coarse prismatic structure; firm; few fine roots; few distinct dark grayish brown (10YR 4/2) clay films in root channels and pores; many medium and coarse prominent strong brown (7.5YR 5/6) masses of iron accumulation in the matrix; few fine prominent black (2.5Y 2.5/1) masses of manganese accumulation throughout; moderately acid; clear smooth boundary.

BCtg1—51 to 63 inches; light brownish gray (10YR 6/2) silt loam; weak coarse prismatic structure; friable; few very fine roots; common prominent very dark grayish brown (10YR 3/2) organo-clay films in root channels and pores; many medium prominent strong brown (7.5YR 5/6) masses of iron accumulation in the matrix; few fine prominent black (2.5Y 2.5/1) masses of manganese accumulation throughout; slightly acid; clear smooth boundary.

BCtg2—63 to 76 inches; light brownish gray (10YR 6/2) silt loam; weak coarse prismatic structure; friable; common prominent very dark grayish brown (10YR 3/2) organo-clay films in root channels and pores; many medium and coarse strong brown (7.5YR 5/6) masses of iron accumulation in the matrix; few fine prominent black (2.5Y 2.5/1) masses of manganese accumulation throughout; slightly acid; clear smooth boundary.

C—76 to 89 inches; yellowish brown (10YR 5/6) silt loam; massive; friable; common medium prominent light brownish gray (10YR 6/2) iron depletions in the matrix; few medium faint strong brown (7.5YR 5/6) masses of iron accumulation in the matrix; few fine prominent black (2.5Y 2.5/1) masses of manganese accumulation throughout; slightly acid.

Range in Characteristics

Thickness of the loess: More than 60 inches
Depth to carbonates: More than 60 inches

Ap or A horizon:
Hue—10YR
Value—3 or 4
Chroma—1 or 2
Texture—silt loam
Content of rock fragments—none
Reaction—moderately acid to neutral

E horizon:
Hue—10YR
Value—4 or 5
Chroma—1 to 3
Texture—silt loam
Content of rock fragments—none
Reaction—strongly acid to neutral

Bt or Btg horizon:
Hue—10YR, 2.5Y, or 5Y
Value—4 to 6
Chroma—2 to 4
Texture—silty clay loam or silty clay
Content of rock fragments—none
Reaction—very strongly acid to slightly acid

BC, BCt, BCtg, or C horizon:
Hue—10YR, 2.5Y, or 5Y
Value—4 to 6
Chroma—2 to 6
Texture—silty clay loam or silt loam
Content of rock fragments—none
Reaction—strongly acid to neutral

17A—Keomah silt loam, 0 to 2 percent slopes

Setting

Landform: Ground moraines
Position on the landform: Summits and shoulders

Map Unit Composition

Keomah and similar soils: 90 percent
Dissimilar soils: 10 percent

Soils of Minor Extent

Similar soils:
- Soils that have more sand in the substratum and/or in the underlying material
- Soils that have less clay in the subsoil
- Soils that have a darker surface layer

Dissimilar soils:
- The poorly drained Denny and Sable soils in depressions or swales; in positions below those of the Keomah soil

Properties and Qualities of the Keomah Soil

Parent material: Loess
Drainage class: Somewhat poorly drained
Slowest permeability within a depth of 40 inches: Slow
Permeability below a depth of 60 inches: Moderately slow or moderate
Depth to restrictive feature: More than 80 inches
Available water capacity: About 11.3 inches to a depth of 60 inches
Content of organic matter in the surface layer: 1.0 to 3.0 percent
Shrink-swell potential: High
Depth and months of highest apparent seasonal high water table: 0.5 foot, January through May
Ponding: None
Flooding: None
Potential for frost action: High
Hazard of corrosion: High for steel and moderate for concrete
Surface runoff class: Low
Susceptibility to water erosion: Low
Susceptibility to wind erosion: Low

Interpretive Groups

Land capability classification: 2w
Prime farmland category: Prime farmland where drained
Hydric soil status: Not hydric

Lawson Series

Taxonomic classification: Fine-silty, mixed, superactive, mesic Aquic Cumulic Hapludolls

Typical Pedon

Lawson silt loam, 0 to 2 percent slopes, frequently flooded, at an elevation of 638 feet above mean sea level; Whiteside County, Illinois; 170 feet north and 1,190 feet east of the southwest corner of sec. 18, T. 21 N., R. 7 E.; USGS Sterling, Illinois, topographic quadrangle; lat. 41 degrees 46 minutes 29.1 seconds N. and long. 89 degrees 41 minutes 02.4 seconds W.; UTM Zone 16T, 0276926 4628250; NAD 83:

Ap—0 to 8 inches; very dark gray (10YR 3/1) silt loam, dark grayish brown (10YR 4/2) dry; moderate medium granular structure; friable; neutral; abrupt smooth boundary.

A1—8 to 17 inches; very dark grayish brown (10YR 3/2) silt loam, grayish brown (10YR 5/2) dry; weak fine subangular blocky structure parting to moderate fine granular; friable; many faint black (10YR 2/1) organic coatings on faces of peds; slightly acid; gradual smooth boundary.

A2—17 to 30 inches; very dark grayish brown (10YR 3/2) silt loam, grayish brown (10YR 5/2) dry; moderate fine subangular blocky structure parting to moderate fine granular; friable; few faint black (10YR 2/1) organic coatings on faces of peds; few fine faint brown (10YR 4/3) masses of iron and manganese accumulation in the matrix; slightly acid; clear smooth boundary.

A3—30 to 35 inches; very dark grayish brown (10YR 3/2) silt loam, grayish brown (10YR 5/2) dry; moderate fine subangular blocky structure; friable; few faint very dark gray (10YR 3/1) organic coatings on faces of peds; few fine faint dark grayish brown (10YR 4/2) iron depletions and few fine faint brown (10YR 4/3) masses of iron and manganese accumulation in the matrix; slightly acid; clear smooth boundary.

AC—35 to 44 inches; dark grayish brown (10YR 4/2) silt loam; weak medium subangular blocky structure; friable; many faint very dark grayish brown (10YR 3/2) organic coatings on faces of peds; few fine prominent yellowish brown (10YR 5/6) masses of iron accumulation in the matrix; slightly acid; clear smooth boundary.

Cg1—44 to 51 inches; grayish brown (2.5Y 5/2) silt loam; massive; friable; few fine faint gray (10YR 5/1) iron depletions in the matrix; few fine prominent yellowish brown (10YR 5/6) masses of iron accumulation in the matrix; neutral; clear smooth boundary.

Cg2—51 to 60 inches; grayish brown (10YR 5/2) and dark grayish brown (2.5Y 4/2) loam; massive; friable; few fine faint gray (10YR 5/1) iron depletions in the matrix; few fine prominent yellowish brown (10YR 5/6) masses of iron accumulation in the matrix; neutral.

Range in Characteristics

Thickness of the mollic epipedon: 24 to 36 inches
Depth to carbonates: Typically more than 60 inches
Other features: Some pedons do not have an AC horizon. This horizon is a transition zone having properties of both the A and C horizons.

Ap and A horizons:
Hue—10YR
Value—2 or 3
Chroma—1 or 2
Texture—silt loam; silty clay loam in layers below the surface in some pedons
Content of rock fragments—0 to 1 percent
Reaction—slightly acid or neutral

C or Cg horizon:
Hue—10YR or 2.5Y
Value—3 to 6
Chroma—1 to 3
Texture—silt loam, silty clay loam, or loam; thin strata of coarser textures in some pedons
Content of rock fragments—0 to 3 percent
Reaction—neutral or slightly alkaline

3451A—Lawson silt loam, 0 to 2 percent slopes, frequently flooded

Setting

Landform: Flood plains

Map Unit Composition

Lawson and similar soils: 85 percent
Dissimilar soils: 15 percent

Soils of Minor Extent

Similar soils:
- Soils that have a dark surface layer less than 24 inches thick
- Soils that are subject to less than frequent flooding

Dissimilar soils:
- The well drained Ross soils on low ridges; in positions higher on the flood plains than those of the Lawson soil
- The poorly drained Sawmill soils in swales

Properties and Qualities of the Lawson Soil

Parent material: Silty alluvium
Drainage class: Somewhat poorly drained
Slowest permeability within a depth of 40 inches: Moderate
Permeability below a depth of 60 inches: Moderate
Depth to restrictive feature: More than 80 inches
Available water capacity: About 11.4 inches to a depth of 60 inches
Content of organic matter in the surface layer: 3.5 to 7.0 percent
Shrink-swell potential: Low
Depth and months of highest apparent seasonal high water table: 1 foot, January through May
Ponding: None
Frequency and most likely period of flooding: Frequent, November through June
Potential for frost action: High
Hazard of corrosion: High for steel and low for concrete
Surface runoff class: Low

Susceptibility to water erosion: Low
Susceptibility to wind erosion: Low

Interpretive Groups

Land capability classification: 3w
Prime farmland category: Prime farmland where protected from flooding or not frequently flooded during the growing season
Hydric soil status: Not hydric

8451A—Lawson silt loam, 0 to 2 percent slopes, occasionally flooded

Setting

Landform: Flood plains

Map Unit Composition

Lawson and similar soils: 90 percent
Dissimilar soils: 10 percent

Soils of Minor Extent

Similar soils:
- Soils that have more sand in the substratum and/or in the underlying material
- Soils that have a dark surface layer less than 24 inches thick
- Soils that are subject to more than occasional flooding

Dissimilar soils:
- The well drained Ross soils in positions higher on the flood plains than those of the Lawson soil
- The poorly drained Sawmill soils in swales

Properties and Qualities of the Lawson Soil

Parent material: Silty alluvium
Drainage class: Somewhat poorly drained
Slowest permeability within a depth of 40 inches: Moderate
Permeability below a depth of 60 inches: Moderate
Depth to restrictive feature: More than 80 inches
Available water capacity: About 12.8 inches to a depth of 60 inches
Content of organic matter in the surface layer: 3.5 to 5.0 percent
Shrink-swell potential: Low
Depth and months of highest apparent seasonal high water table: 1 foot, January through May
Ponding: None
Frequency and most likely period of flooding: Occasional, November through June
Potential for frost action: High
Hazard of corrosion: High for steel and low for concrete
Surface runoff class: Low
Susceptibility to water erosion: Low
Susceptibility to wind erosion: Low

Interpretive Groups

Land capability classification: 2w
Prime farmland category: Prime farmland
Hydric soil status: Not hydric

M-W—Miscellaneous water

- This map unit consists of sewage lagoons and other bodies of water that cannot be used for fishing or swimming.

Miami Series

Taxonomic classification: Fine-loamy, mixed, active, mesic Oxyaquic Hapludalfs

Typical Pedon

Miami silt loam, 10 to 18 percent slopes, eroded, on a slope of 12 percent at an elevation of 845 feet above mean sea level; McLean County, Illinois; 1,500 feet north and 1,400 feet east of the southwest corner of sec. 26, T. 23 N., R. 4 E.; USGS Arrowsmith, Illinois, topographic quadrangle; lat. 40 degrees 25 minutes 03.2 seconds N. and long. 88 degrees 43 minutes 17.0 seconds W.; UTM Zone 16T, 0353959E 4475526N; NAD 83:

Ap—0 to 4 inches; very dark grayish brown (10YR 3/2) silt loam mixed with dark grayish brown (10YR 4/2) subsurface material; pale brown (10YR 6/3) dry; weak fine subangular blocky structure; friable; few fine roots; neutral; abrupt smooth boundary.

Bt1—4 to 12 inches; brown (10YR 5/3) silty clay loam; weak fine and medium subangular blocky structure; friable; few fine roots; few faint dark brown (10YR 3/3) organo-clay films on faces of peds; moderately acid; clear wavy boundary.

2Bt2—12 to 19 inches; brown (10YR 5/3) clay loam; moderate medium subangular blocky structure; friable; few fine roots; few faint brown (10YR 4/3) clay films on faces of peds; few fine prominent iron-manganese concretions and stains throughout; 5 percent fine gravel; moderately acid; clear wavy boundary.

2Bt3—19 to 28 inches; brown (10YR 5/3) clay loam; moderate medium angular blocky structure; friable; few fine roots; common faint brown (10YR 4/3) clay films on faces of peds; few fine distinct grayish brown (2.5Y 5/2) iron depletions in the matrix; few fine prominent iron-manganese concretions and stains throughout; 5 percent fine gravel; neutral; clear wavy boundary.

2BCt—28 to 33 inches; light olive brown (2.5Y 5/4) clay loam; weak medium subangular blocky structure; friable; common faint brown (10YR 4/3) clay films on faces of peds; few fine distinct grayish brown (2.5Y 5/2) iron depletions in the matrix; common fine prominent iron-manganese concretions and stains throughout; 5 percent fine gravel; strongly effervescent; slightly alkaline; gradual wavy boundary.

2Cd—33 to 60 inches; light olive brown (2.5Y 5/4) loam; massive; friable; common medium distinct grayish brown (2.5Y 5/2) iron depletions in the matrix; common fine and medium prominent iron-manganese concretions and stains throughout; 10 percent fine and medium gravel; violently effervescent; moderately alkaline.

Range in Characteristics

Thickness of the loess: 0 to 18 inches
Depth to carbonates: 20 to 40 inches
Depth to the base of the argillic horizon: 24 to 40 inches

Ap or A horizon:
Hue—10YR
Value—3 to 5
Chroma—1 to 4
Texture—silt loam or loam

Content of rock fragments—0 to 5 percent
Reaction—moderately acid to neutral

E horizon (where present):
Hue—10YR
Value—5 or 6
Chroma—3 or 4
Texture—silt loam or loam
Content of rock fragments—0 to 5 percent
Reaction—moderately acid to neutral

Bt or 2Bt horizon:
Hue—7.5YR, 10YR, or 2.5Y
Value—4 to 6
Chroma—3 to 6
Texture—clay loam, silty clay loam, loam, or silt loam
Content of rock fragments—1 to 10 percent
Reaction—strongly acid to slightly acid in the upper part; ranges to neutral in the lower part

BCt or 2BCt horizon:
Hue—7.5YR, 10YR, or 2.5Y
Value—4 to 6
Chroma—3 or 4
Texture—clay loam or loam
Content of rock fragments—1 to 10 percent
Reaction—neutral to moderately alkaline

Cd or 2Cd horizon:
Hue—10YR or 2.5Y
Value—5 or 6
Chroma—3 or 4
Texture—loam; gravelly sandy loam in map unit 964F
Content of rock fragments—1 to 10 percent; ranges to 35 percent in map unit 964F
Reaction—slightly alkaline or moderately alkaline

27D2—Miami silt loam, 10 to 18 percent slopes, eroded

Setting

Landform: Ground moraines
Position on the landform: Backslopes

Map Unit Composition

Miami and similar soils: 90 percent
Dissimilar soils: 10 percent

Soils of Minor Extent

Similar soils:
- Soils that have carbonates at a depth of more than 40 inches
- Soils that have a surface layer of loam
- Soils that have less sand in the subsoil
- Soils that have slopes of more than 18 percent
- Soils that do not have a root-restrictive substratum

Dissimilar soils:
- The somewhat poorly drained Lawson soils in drainageways; in positions below those of the Miami soil
- The poorly drained Sawmill soils on flood plains; in positions below those of the Miami soil

Properties and Qualities of the Miami Soil

Parent material: Loess over till
Drainage class: Moderately well drained
Slowest permeability within a depth of 40 inches: Moderately slow
Permeability below a depth of 60 inches: Moderately slow
Depth to restrictive feature: 24 to 40 inches to dense material
Available water capacity: About 7.5 inches to a depth of 60 inches
Content of organic matter in the surface layer: 0.5 to 2.0 percent
Shrink-swell potential: Moderate
Depth and months of highest perched seasonal high water table: 2 feet, February through April
Ponding: None
Flooding: None
Accelerated erosion: The surface layer has been thinned by erosion.
Potential for frost action: Moderate
Hazard of corrosion: High for steel and moderate for concrete
Surface runoff class: Medium
Susceptibility to water erosion: High
Susceptibility to wind erosion: Low

Interpretive Groups

Land capability classification: 4e
Prime farmland category: Not prime farmland
Hydric soil status: Not hydric

964F—Miami and Hennepin soils, 18 to 35 percent slopes

Setting

Landform: End moraines
Position on the landform: Backslopes

Map Unit Composition

Miami and similar soils: 0 to 90 percent
Hennepin and similar soils: 0 to 90 percent
Dissimilar soils: 10 percent

Soils of Minor Extent

Similar soils:
- Soils that are grayer in the lower part of the subsoil and in the substratum
- Soils that have carbonates at a depth of more than 40 inches
- Soils that have a surface layer of silt loam
- Soils that have less sand and gravel in the subsoil and substratum
- Soils that have a darker surface layer

Dissimilar soils:
- The somewhat poorly drained Lawson soils in drainageways; in positions below those of the Miami and Hennepin soils

- The poorly drained Sawmill soils on flood plains; in positions below those of the Miami and Hennepin soils

Properties and Qualities of the Miami Soil

Parent material: Till
Drainage class: Moderately well drained
Slowest permeability within a depth of 40 inches: Moderately slow
Permeability below a depth of 60 inches: Moderate
Depth to restrictive feature: 24 to 40 inches to dense material
Available water capacity: About 6.9 inches to a depth of 60 inches
Content of organic matter in the surface layer: 1.0 to 2.5 percent
Shrink-swell potential: Moderate
Depth and months of highest perched seasonal high water table: 2 feet, February through April
Ponding: None
Flooding: None
Potential for frost action: Moderate
Hazard of corrosion: High for steel and moderate for concrete
Surface runoff class: High
Susceptibility to water erosion: High
Susceptibility to wind erosion: Low

Properties and Qualities of the Hennepin Soil

Parent material: Till
Drainage class: Well drained
Slowest permeability within a depth of 40 inches: Moderately slow
Permeability below a depth of 60 inches: Moderately slow
Depth to restrictive feature: More than 80 inches
Available water capacity: About 6.7 inches to a depth of 60 inches
Content of organic matter in the surface layer: 1.0 to 2.5 percent
Shrink-swell potential: Low
Ponding: None
Flooding: None
Potential for frost action: Moderate
Hazard of corrosion: Low for steel and concrete
Surface runoff class: High
Susceptibility to water erosion: High
Susceptibility to wind erosion: Low

Interpretive Groups

Land capability classification: Miami—6e; Hennepin—6e
Prime farmland category: Not prime farmland
Hydric soil status: Miami—not hydric; Hennepin—not hydric

802B—Orthents, loamy, undulating

Setting

Landform: Leveled land, cuts (such as those for roads or railroads), and fill areas

Map Unit Composition

Orthents, loamy, and similar soils: 85 percent
Dissimilar components: 15 percent

Components of Minor Extent

Similar soils:
- Soils that have slopes of less than 1 percent
- Soils that have slopes of more than 7 percent

Dissimilar components:
- Borrow areas
- Areas of urban land

Properties and Qualities of the Loamy Orthents

Parent material: Earthy fill
Drainage class: Moderately well drained
Slowest permeability within a depth of 40 inches: Slow
Permeability below a depth of 60 inches: Slow to moderate
Depth to restrictive feature: More than 80 inches
Available water capacity: About 10.9 inches to a depth of 60 inches
Content of organic matter in the surface layer: 0.5 to 2.0 percent
Shrink-swell potential: Moderate
Depth and months of highest apparent seasonal high water table: 3.3 feet, February through April
Ponding: None
Flooding: None
Potential for frost action: Moderate
Hazard of corrosion: High for steel and moderate for concrete
Surface runoff class: Low
Susceptibility to water erosion: Moderate
Susceptibility to wind erosion: Low

Interpretive Groups

Land capability classification: 3e
Prime farmland category: Not prime farmland
Hydric soil status: Not hydric

802D—Orthents, loamy, 2 to 20 percent slopes

Setting

Landform: Fill areas, gravel pits, and sand pits

Map Unit Composition

Orthents, loamy, and similar soils: 90 percent
Dissimilar components: 10 percent

Components of Minor Extent

Similar soils:
- The well drained Senachwine and moderately well drained Miami soils

Dissimilar components:
- The poorly drained Sawmill soils on flood plains; in positions below those of the Orthents
- Areas of urban land

Properties and Qualities of the Loamy Orthents

Parent material: Earthy cut and fill material
Drainage class: Moderately well drained
Slowest permeability within a depth of 40 inches: Slow

Permeability below a depth of 60 inches: Slow to moderate
Depth to restrictive feature: More than 80 inches
Available water capacity: About 10.9 inches to a depth of 60 inches
Content of organic matter in the surface layer: 0.5 to 2.0 percent
Shrink-swell potential: Moderate
Depth and months of highest apparent seasonal high water table: 3.3 feet, February through April
Ponding: None
Flooding: None
Potential for frost action: Moderate
Hazard of corrosion: High for steel and moderate for concrete
Surface runoff class: Medium
Susceptibility to water erosion: High
Susceptibility to wind erosion: Low

Interpretive Groups

Land capability classification: 4e
Prime farmland category: Not prime farmland
Hydric soil status: Not hydric

Osco Series

Taxonomic classification: Fine-silty, mixed, superactive, mesic Typic Argiudolls

Typical Pedon

Osco silt loam, 2 to 5 percent slopes, on a slope of 3 percent at an elevation of 858 feet above mean sea level; Carroll County, Illinois; 88 feet west and 316 feet north of the southeast corner of sec. 23, T. 24 N., R. 6 E.; USGS Lanark, Illinois, topographic quadrangle; lat. 42 degrees 03 minutes 13.6 seconds N. and long. 89 degrees 45 minutes 48.6 seconds W.; UTM Zone 16T, 0271317E 4659442N; NAD 83:

Ap—0 to 10 inches; very dark brown (10YR 2/2) and black (10YR 2/1) silt loam, very dark grayish brown (10YR 3/2) dry; moderate fine granular structure; friable; slightly acid; clear smooth boundary.

A—10 to 14 inches; very dark grayish brown (10YR 3/2) silt loam, dark grayish brown (10YR 4/2) dry; moderate medium and coarse granular structure; friable; strongly acid; clear smooth boundary.

BA—14 to 20 inches; dark yellowish brown (10YR 3/4) and dark brown (10YR 3/3) silt loam, brown (10YR 5/3) dry; weak fine subangular blocky structure; friable; few distinct light brownish gray (10YR 6/2) (dry) silt coatings on faces of peds; many roots and common earthworm casts and holes; strongly acid; clear smooth boundary.

Bt1—20 to 26 inches; dark brown (10YR 4/3) silty clay loam; moderate fine subangular blocky structure; friable; common faint dark brown (10YR 3/3) organo-clay films; few distinct gray (10YR 6/1) (dry) silt coatings on faces of peds; strongly acid; clear smooth boundary.

Bt2—26 to 37 inches; dark yellowish brown (10YR 4/4) and yellowish brown (10YR 5/4) silty clay loam; moderate medium subangular blocky structure; firm; many faint dark yellowish brown (10YR 4/4) clay films and common distinct light brownish gray (10YR 6/2) (dry) silt coatings on faces of peds; common fine faint brown (10YR 5/3) iron depletions and common medium prominent strong brown (7.5YR 5/8) masses of iron accumulation in the matrix; many very dark gray (N 3/) and dark brown (7.5YR 3/2) iron-manganese concretions throughout; strongly acid; clear smooth boundary.

Bt3—37 to 45 inches; light yellowish brown (10YR 6/4) silty clay loam; moderate coarse subangular blocky structure; many faint dark yellowish brown (10YR 4/4) clay films on faces of peds; common fine distinct light brownish gray (10YR 6/2) iron depletions and few medium prominent strong brown (7.5YR 5/8) masses of iron accumulation in the matrix; many prominent dark brown (7.5YR 3/2) iron-manganese concretions throughout; strongly acid; gradual smooth boundary.

BC—45 to 55 inches; yellowish brown (10YR 5/4) and dark brown (10YR 4/3) silty clay loam; weak coarse angular blocky structure; friable; few fine distinct light brownish gray (10YR 6/2) iron depletions in the matrix; strongly acid; gradual smooth boundary.

C—55 to 60 inches; yellowish brown (10YR 5/4 and 5/6) and brown (10YR 4/3) silt loam; massive; some vertical partings; friable; many fine distinct grayish brown (10YR 5/2) iron depletions in the matrix; moderately acid.

Range in Characteristics

Thickness of the mollic epipedon: 10 to 18 inches
Thickness of the loess: More than 60 inches
Depth to carbonates: More than 48 inches
Depth to the base of the argillic horizon: 36 to 66 inches

Ap and A horizons:
Hue—10YR
Value—2 or 3
Chroma—1 or 2
Texture—silt loam
Content of rock fragments—none
Reaction—strongly acid to neutral

BA horizon (not in all pedons) or Bt horizon:
Hue—10YR
Value—3 to 6
Chroma—3 or 4
Texture—silty clay loam or silt loam
Content of rock fragments—none
Reaction—strongly acid to neutral

BC and C horizons:
Hue—10YR; 2.5Y below a depth of 40 inches in some pedons
Value—4 or 5
Chroma—2 to 6
Texture—silt loam or silty clay loam
Content of rock fragments—none
Reaction—moderately acid to slightly alkaline

86B—Osco silt loam, 2 to 5 percent slopes

Setting

Landform: Ground moraines
Position on the landform: Summits and shoulders

Map Unit Composition

Osco and similar soils: 90 percent
Dissimilar soils: 10 percent

Soils of Minor Extent

Similar soils:
- Soils that are grayer in the lower part of the subsoil
- Soils that have more sand in the lower part of the subsoil and in the substratum
- Soils that have carbonates closer to the surface
- Soils that have an eroded surface layer

Dissimilar soils:
- The poorly drained Denny and Sable soils in depressions or swales; in positions below those of the Osco soil

Properties and Qualities of the Osco Soil

Parent material: Loess
Drainage class: Well drained
Slowest permeability within a depth of 40 inches: Moderate
Permeability below a depth of 60 inches: Moderate
Depth to restrictive feature: More than 80 inches
Available water capacity: About 11.9 inches to a depth of 60 inches
Content of organic matter in the surface layer: 3.0 to 4.0 percent
Shrink-swell potential: Moderate
Depth and months of highest apparent seasonal high water table: 4 feet, February through April
Ponding: None
Flooding: None
Potential for frost action: High
Hazard of corrosion: Moderate for steel and concrete
Surface runoff class: Low
Susceptibility to water erosion: Low
Susceptibility to wind erosion: Low

Interpretive Groups

Land capability classification: 2e
Prime farmland category: Prime farmland
Hydric soil status: Not hydric

Peotone Series

Taxonomic classification: Fine, smectitic, mesic Cumulic Vertic Endoaquolls

Typical Pedon

Peotone silty clay loam, 0 to 2 percent slopes, at an elevation of 692 feet above mean sea level; Macon County, Illinois; 310 feet north and 2,435 feet west of the center of sec. 13, T. 14 N., R. 3 E.; USGS Dalton City, Illinois, topographic quadrangle; lat. 39 degrees 39 minutes 40.7 seconds N. and long. 88 degrees 49 minutes 43.6 seconds W.; UTM Zone 16T, 0343123E 4391766N; NAD 83:

Ap—0 to 6 inches; black (5Y 2.5/1) silty clay loam, dark gray (10YR 4/1) dry; moderate very fine subangular blocky structure; firm; neutral; clear smooth boundary.

A—6 to 14 inches; black (5Y 2.5/1) silty clay loam, dark gray (10YR 4/1) dry; moderate very fine subangular blocky structure; moderate medium angular blocky compaction zone in the upper 2 inches; firm; neutral; clear smooth boundary.

AB—14 to 22 inches; very dark gray (5Y 3/1) silty clay loam, gray (5Y 5/1) dry; moderate fine angular blocky structure; firm; many faint black (5Y 2.5/1) organic coatings on faces of peds; neutral; clear smooth boundary.

BA—22 to 28 inches; very dark gray (5Y 3/1) silty clay loam, gray (5Y 5/1) dry; moderate fine prismatic structure; firm; few medium rounded prominent black (7.5YR 2.5/1) very weakly cemented iron-manganese nodules throughout; neutral; clear smooth boundary.

Bg1—28 to 36 inches; dark gray (5Y 4/1) silty clay loam; weak medium prismatic structure; firm; few fine faint gray (5Y 5/1) iron depletions in the matrix; few medium rounded prominent black (7.5YR 2.5/1) very weakly cemented iron-manganese nodules throughout; neutral; clear smooth boundary.

Bg2—36 to 44 inches; gray (5Y 5/1) silty clay loam; weak medium prismatic structure; firm; common fine prominent light olive brown (2.5Y 5/4) masses of iron and manganese accumulation and yellowish brown (10YR 5/6) masses of iron accumulation in the matrix; few fine and medium rounded prominent black (7.5YR 2.5/1) very weakly cemented iron-manganese nodules throughout; neutral; gradual smooth boundary.

BCg—44 to 60 inches; gray (5Y 5/1) silty clay loam; weak medium prismatic structure; firm; common medium prominent strong brown (7.5YR 5/6) masses of iron accumulation and light yellowish brown (2.5Y 6/4) masses of iron and manganese accumulation in the matrix; krotovinas (11 percent); violently effervescent; slightly alkaline.

Range in Characteristics

Thickness of the mollic epipedon: 24 to 36 inches
Thickness of the loess or colluvial sediment: More than 40 inches
Depth to carbonates: More than 30 inches
Depth to the base of the cambic horizon: More than 38 inches

Ap and A horizons:
Hue—10YR, 2.5Y, 5Y, or N
Value—2 to 3
Chroma—0 or 1
Texture—silty clay loam
Content of rock fragments—typically none
Reaction—moderately acid to slightly alkaline

AB or BA horizon:
Hue—10YR, 2.5Y, 5Y, or N
Value—2 to 3
Chroma—0 or 1
Texture—silty clay loam or silty clay
Content of rock fragments—typically none
Reaction—moderately acid to slightly alkaline

Bg horizon:
Hue—10YR, 2.5Y, 5Y, or N
Value—2 to 6
Chroma—0 to 2
Texture—silty clay loam or silty clay
Content of rock fragments—0 to 1 percent
Reaction—slightly acid to slightly alkaline

BCg or Cg horizon (where present):
Hue—10YR, 2.5Y, 5Y, or N
Value—4 to 6
Chroma—0 to 2
Texture—silt loam or silty clay loam

Content of rock fragments—0 to 1 percent
Reaction—neutral to moderately alkaline

330A—Peotone silty clay loam, 0 to 2 percent slopes

Setting

Landform: Closed depressions

Map Unit Composition

Peotone and similar soils: 93 percent
Dissimilar soils: 7 percent

Soils of Minor Extent

Similar soils:
- Soils that have carbonates closer to the surface
- Soils that have a dark surface soil less than 24 inches thick

Dissimilar soils:
- The somewhat poorly drained Elburn soils on slight rises; in positions above those of the Peotone soil

Properties and Qualities of the Peotone Soil

Parent material: Loess and/or colluvium
Drainage class: Very poorly drained
Slowest permeability within a depth of 40 inches: Moderately slow
Permeability below a depth of 60 inches: Moderately slow
Depth to restrictive feature: More than 80 inches
Available water capacity: About 8.7 inches to a depth of 60 inches
Content of organic matter in the surface layer: 4.5 to 7.0 percent
Shrink-swell potential: High
Depth and months of highest apparent seasonal high water table: At the surface, January through June
Duration and most likely period of ponding: Brief, January through May
Flooding: None
Potential for frost action: High
Hazard of corrosion: High for steel and low for concrete
Surface runoff class: Negligible
Susceptibility to water erosion: Low
Susceptibility to wind erosion: Moderate

Interpretive Groups

Land capability classification: 3w
Prime farmland category: Prime farmland where drained
Hydric soil status: Hydric

865—Pits, gravel

- This map unit consists of excavations from which sand or gravel has been removed.

Plano Series

Taxonomic classification: Fine-silty, mixed, superactive, mesic Typic Argiudolls
Taxadjunct features: The Plano soil in map unit 199B2 has a thinner dark surface layer than is defined as the range for the series. This difference, however, does not

significantly affect the use or behavior of the soil. This soil is classified as a fine-silty, mixed, superactive, mesic Mollic Hapludalf.

Typical Pedon

Plano silt loam, 0 to 2 percent slopes, at an elevation of 715 feet above mean sea level; Stark County, Illinois; 1,200 feet south and 1,920 feet east of the northwest corner of sec. 13, T. 12 N., R. 7 E.; USGS Castleton, Illinois, topographic quadrangle; lat. 41 degrees 01 minute 45.1 seconds N. and long. 89 degrees 39 minutes 00.4 second W.; UTM Zone 16T, 0277210E 4545382N; NAD 83:

Ap—0 to 9 inches; very dark brown (10YR 2/2) silt loam, grayish brown (10YR 5/2) dry; moderate fine granular structure; friable; few very fine roots; slightly acid; clear smooth boundary.

A—9 to 14 inches; dark brown (10YR 3/3) silt loam, brown (10YR 5/3) dry; moderate fine granular structure; friable; many very fine roots; slightly acid; clear smooth boundary.

Bt1—14 to 19 inches; dark yellowish brown (10YR 4/4) silty clay loam; moderate fine subangular blocky structure; friable; common very fine roots; many distinct dark brown (10YR 3/3) organo-clay films on faces of peds; slightly acid; clear smooth boundary.

Bt2—19 to 31 inches; dark yellowish brown (10YR 4/4) silty clay loam; moderate medium subangular blocky structure; friable; common very fine roots; many distinct brown (10YR 4/3) clay films on faces of peds; slightly acid; clear smooth boundary.

Bt3—31 to 43 inches; dark yellowish brown (10YR 4/4) silty clay loam; moderate medium prismatic structure parting to moderate medium subangular blocky; friable; few very fine roots; many distinct brown (10YR 4/3) clay films on faces of peds; common distinct very pale brown (10YR 7/3) (dry) clay depletions on faces of peds; few fine faint yellowish brown (10YR 5/4) masses of iron and manganese accumulation in the matrix; slightly acid; clear smooth boundary.

Bt4—43 to 49 inches; dark yellowish brown (10YR 4/4) silt loam; moderate medium prismatic structure; friable; few very fine roots; many distinct brown (10YR 4/3) clay films on faces of peds; few distinct very pale brown (10YR 7/3) (dry) clay depletions on faces of peds; slightly acid; clear smooth boundary.

2Bt5—49 to 53 inches; dark yellowish brown (10YR 4/4) clay loam; weak medium prismatic structure; friable; few fine roots; many distinct brown (10YR 4/3) clay films on faces of peds; neutral; clear smooth boundary.

2BC—53 to 60 inches; brown (7.5YR 4/4) sandy loam; weak medium subangular blocky structure; very friable; many distinct dark yellowish brown (10YR 3/4) clay films bridging sand grains; 5 percent gravel; neutral; gradual smooth boundary.

2C—60 to 72 inches; stratified yellowish brown (10YR 5/6) and brown (7.5YR 4/4) sandy loam, loam, and loamy sand; massive; friable; 12 percent gravel; neutral.

Range in Characteristics

Thickness of the mollic epipedon or dark surface layer: 7 to 20 inches
Thickness of the loess: 40 to 60 inches
Depth to carbonates: More than 60 inches
Depth to the base of the argillic horizon: 44 to 70 inches

Ap and A horizons:
Hue—10YR
Value—2 or 3
Chroma—1 to 3
Texture—silt loam

Content of rock fragments—none
Reaction—slightly acid or neutral

AB or BA horizon (where present):
Hue—10YR
Value—3 or 4
Chroma—2 to 4
Texture—silt loam or silty clay loam
Content of rock fragments—none
Reaction—moderately acid to neutral

Bt horizon:
Hue—7.5YR or 10YR
Value—3 to 5
Chroma—2 to 4
Texture—silty clay loam or silt loam
Content of rock fragments—none
Reaction—strongly acid to neutral

2Bt and 2BC horizons:
Hue—7.5YR or 10YR
Value—3 to 5
Chroma—2 to 6
Texture—clay loam, sandy clay loam, loam, sandy loam, loamy sand, or silt loam
Content of rock fragments—2 to 15 percent
Reaction—moderately acid to slightly alkaline

2C horizon:
Hue—7.5YR, 10YR, or 2.5Y
Value—3 to 5
Chroma—3 to 6
Texture—sandy loam, loam, sand, loamy sand, or silt loam; stratified in some pedons; stratified sand to loamy sand in the sandy substratum phase
Content of rock fragments—3 to 15 percent
Reaction—moderately acid to moderately alkaline

199A—Plano silt loam, 0 to 2 percent slopes

Setting

Landform: Outwash plains and stream terraces
Position on the landform: Summits

Map Unit Composition

Plano and similar soils: 94 percent
Dissimilar soils: 6 percent

Soils of Minor Extent

Similar soils:
- Soils that are grayer in the upper part of the subsoil
- Soils that have more sand in the subsoil
- Soils that have slopes of more than 2 percent

Dissimilar soils:
- The somewhat poorly drained Elburn soils on broad flats; in positions below those of the Plano soil
- The poorly drained Sable soils in swales

Properties and Qualities of the Plano Soil

Parent material: Loess over stratified loamy outwash
Drainage class: Well drained
Slowest permeability within a depth of 40 inches: Moderate
Permeability below a depth of 60 inches: Moderate or moderately rapid
Depth to restrictive feature: More than 80 inches
Available water capacity: About 11.3 inches to a depth of 60 inches
Content of organic matter in the surface layer: 3.0 to 4.0 percent
Shrink-swell potential: Moderate
Ponding: None
Flooding: None
Potential for frost action: High
Hazard of corrosion: Moderate for steel and concrete
Surface runoff class: Low
Susceptibility to water erosion: Low
Susceptibility to wind erosion: Low

Interpretive Groups

Land capability classification: 1
Prime farmland category: Prime farmland
Hydric soil status: Not hydric

199B2—Plano silt loam, 2 to 5 percent slopes, eroded

Setting

Landform: Outwash plains
Position on the landform: Shoulders

Map Unit Composition

Plano and similar soils: 90 percent
Dissimilar soils: 10 percent

Soils of Minor Extent

Similar soils:
- Soils that are grayer in the upper part of the subsoil
- Soils that are not eroded
- Soils that have more sand in the subsoil and substratum

Dissimilar soils:
- The somewhat poorly drained Elburn soils in positions below those of the Plano soil
- The poorly drained Sable soils in swales

Properties and Qualities of the Plano Soil

Parent material: Loess over stratified loamy outwash
Drainage class: Well drained
Slowest permeability within a depth of 40 inches: Moderate
Permeability below a depth of 60 inches: Moderately rapid
Depth to restrictive feature: More than 80 inches
Available water capacity: About 10.4 inches to a depth of 60 inches
Content of organic matter in the surface layer: 1.5 to 3.5 percent
Shrink-swell potential: Moderate
Ponding: None
Flooding: None
Accelerated erosion: The surface layer has been thinned by erosion.

Potential for frost action: High
Hazard of corrosion: Moderate for steel and concrete
Surface runoff class: Low
Susceptibility to water erosion: Moderate
Susceptibility to wind erosion: Low

Interpretive Groups

Land capability classification: 2e
Prime farmland category: Prime farmland
Hydric soil status: Not hydric

748A—Plano silt loam, sandy substratum, 0 to 2 percent slopes

Setting

Landform: Outwash plains
Position on the landform: Summits and shoulders

Map Unit Composition

Plano and similar soils: 90 percent
Dissimilar soils: 10 percent

Soils of Minor Extent

Similar soils:
- Soils that are grayer in the lower part of the subsoil
- Soils that have less sand in the subsoil and substratum

Dissimilar soils:
- The somewhat poorly drained Elburn soils on broad flats; in positions below those of the Plano soil
- The poorly drained Sable soils in swales

Properties and Qualities of the Plano Soil

Parent material: Loess over sandy outwash
Drainage class: Well drained
Slowest permeability within a depth of 40 inches: Moderate
Permeability below a depth of 60 inches: Rapid
Depth to restrictive feature: 40 to 60 inches to strongly contrasting textural stratification
Available water capacity: About 10.4 inches to a depth of 60 inches
Content of organic matter in the surface layer: 3.0 to 4.0 percent
Shrink-swell potential: Moderate
Ponding: None
Flooding: None
Potential for frost action: High
Hazard of corrosion: Moderate for steel and concrete
Surface runoff class: Low
Susceptibility to water erosion: Low
Susceptibility to wind erosion: Low

Interpretive Groups

Land capability classification: 1
Prime farmland category: Prime farmland
Hydric soil status: Not hydric

748B—Plano silt loam, sandy substratum, 2 to 5 percent slopes

Setting

Landform: Outwash plains
Position on the landform: Summits, shoulders, and backslopes

Map Unit Composition

Plano and similar soils: 90 percent
Dissimilar soils: 10 percent

Soils of Minor Extent

Similar soils:
- Soils that are grayer in the lower part of the subsoil and in the substratum
- Soils that have less sand in the subsoil

Dissimilar soils:
- The somewhat poorly drained Elburn soils in positions below those of the Plano soil
- The poorly drained Sable soils in swales

Properties and Qualities of the Plano Soil

Parent material: Loess over sandy outwash
Drainage class: Well drained
Slowest permeability within a depth of 40 inches: Moderate
Permeability below a depth of 60 inches: Rapid
Depth to restrictive feature: 40 to 60 inches to strongly contrasting textural stratification
Available water capacity: About 10.1 inches to a depth of 60 inches
Content of organic matter in the surface layer: 3.0 to 4.0 percent
Shrink-swell potential: Moderate
Ponding: None
Flooding: None
Potential for frost action: High
Hazard of corrosion: Moderate for steel and concrete
Surface runoff class: Low
Susceptibility to water erosion: Low
Susceptibility to wind erosion: Low

Interpretive Groups

Land capability classification: 2e
Prime farmland category: Prime farmland
Hydric soil status: Not hydric

7199A—Plano silt loam, 0 to 2 percent slopes, rarely flooded

Setting

Landform: Stream terraces and flood-plain steps

Map Unit Composition

Plano and similar soils: 94 percent
Dissimilar soils: 6 percent

Soils of Minor Extent

Similar soils:
- Soils that are grayer in the lower part of the subsoil
- Soils that have more sand in the subsoil and substratum
- Soils that are not subject to flooding

Dissimilar soils:
- The somewhat poorly drained Elburn soils on broad flats; in positions below those of the Plano soil
- The poorly drained Sawmill soils on flood plains; in positions below those of the Plano soil

Properties and Qualities of the Plano Soil

Parent material: Loess over loamy and sandy outwash
Drainage class: Well drained
Slowest permeability within a depth of 40 inches: Moderate
Permeability below a depth of 60 inches: Moderate or moderately rapid
Depth to restrictive feature: More than 80 inches
Available water capacity: About 11.3 inches to a depth of 60 inches
Content of organic matter in the surface layer: 3.0 to 4.0 percent
Shrink-swell potential: Moderate
Ponding: None
Frequency and most likely period of flooding: Rare, November through June
Potential for frost action: High
Hazard of corrosion: Moderate for steel and concrete
Surface runoff class: Low
Susceptibility to water erosion: Low
Susceptibility to wind erosion: Low

Interpretive Groups

Land capability classification: 1
Prime farmland category: Prime farmland
Hydric soil status: Not hydric

7199B—Plano silt loam, 2 to 5 percent slopes, rarely flooded

Setting

Landform: Flood-plain steps and stream terraces

Map Unit Composition

Plano and similar soils: 90 percent
Dissimilar soils: 10 percent

Soils of Minor Extent

Similar soils:
- Soils that are grayer in the lower part of the subsoil
- Soils that have more sand in the subsoil and substratum
- Soils that are not subject to flooding

Dissimilar soils:
- The somewhat poorly drained Elburn soils in positions below those of the Plano soil
- The poorly drained Sawmill soils on flood plains; in positions below those of the Plano soil

Properties and Qualities of the Plano Soil

Parent material: Loess over loamy and sandy outwash
Drainage class: Well drained
Slowest permeability within a depth of 40 inches: Moderate
Permeability below a depth of 60 inches: Moderately rapid
Depth to restrictive feature: More than 80 inches
Available water capacity: About 10.4 inches to a depth of 60 inches
Content of organic matter in the surface layer: 3.0 to 4.0 percent
Shrink-swell potential: Moderate
Ponding: None
Frequency and most likely period of flooding: Rare, November through June
Potential for frost action: High
Hazard of corrosion: Moderate for steel and concrete
Surface runoff class: Low
Susceptibility to water erosion: Low
Susceptibility to wind erosion: Low

Interpretive Groups

Land capability classification: 2e
Prime farmland category: Prime farmland
Hydric soil status: Not hydric

Proctor Series

Taxonomic classification: Fine-silty, mixed, superactive, mesic Typic Argiudolls
Taxadjunct features: The Proctor soil in map unit 148B2 has a thinner dark surface layer than is defined as the range for the series. This difference, however, does not significantly affect the use or behavior of the soil. This soil is classified as a fine-silty, mixed, superactive, mesic Mollic Hapludalf.

Typical Pedon

Proctor silt loam, 0 to 2 percent slopes, rarely flooded, at an elevation of 554 feet above mean sea level; Christian County, Illinois; 620 feet south and 140 feet east of the northwest corner of sec. 18, T. 15 N., R. 2 W.; USGS Mount Auburn, Illinois, topographic quadrangle; lat. 39 degrees 45 minutes 19.2 seconds N. and long. 89 degrees 22 minutes 04.5 seconds W.; UTM Zone 16S, 0297145E 4403283N; NAD 83:

Ap—0 to 10 inches; very dark grayish brown (10YR 3/2) silt loam, grayish brown (10YR 5/2) dry; weak fine granular structure; friable; common very fine roots; very strongly acid; clear smooth boundary.

AB—10 to 16 inches; dark brown (10YR 3/3) silt loam, grayish brown (10YR 5/2) dry; weak very fine and fine subangular blocky structure; friable; common very fine roots; many distinct very dark grayish brown (10YR 3/2) organic coatings on faces of peds; moderately acid; clear smooth boundary.

Bt1—16 to 22 inches; brown (10YR 4/3) silty clay loam; moderate fine subangular blocky structure; firm; common very fine roots; common faint very dark grayish brown (10YR 3/2) organo-clay films on faces of peds; slightly acid; clear smooth boundary.

Bt2—22 to 34 inches; brown (10YR 4/3) silty clay loam; moderate fine subangular blocky structure; firm; few very fine roots; common faint dark brown (10YR 3/3) organo-clay films on faces of peds; few fine rounded iron-manganese oxide concretions; moderately acid; clear smooth boundary.

2Bt3—34 to 38 inches; brown (7.5YR 4/4) clay loam; weak medium subangular blocky structure; firm; few very fine roots; few distinct brown (10YR 4/3) clay films on

faces of peds; few fine distinct yellowish brown (10YR 5/6) masses of iron accumulation; few fine rounded iron-manganese oxide concretions; moderately acid; clear smooth boundary.

2Bt4—38 to 47 inches; strong brown (7.5YR 4/6), stratified clay loam and loam; weak medium subangular blocky structure; friable; few very fine roots; few prominent brown (10YR 4/3) clay films on faces of peds; few fine distinct yellowish brown (10YR 5/4) iron and manganese accumulations; few fine rounded iron-manganese oxide concretions; slightly acid; clear smooth boundary.

2Bt5—47 to 53 inches; brown (7.5YR 4/4) sandy loam; weak medium subangular blocky structure; friable; common distinct brown (10YR 4/3) clay films on faces of peds; neutral; clear smooth boundary.

2C—53 to 60 inches; brown (10YR 4/3) loamy sand; single grain; very friable; about 3 percent medium and coarse gravel; neutral.

Range in Characteristics

Thickness of the mollic epipedonor dark surface layer: 7 to 20 inches
Thickness of the loess: 20 to 40 inches
Depth to carbonates: More than 60 inches
Depth to the base of the argillic horizon: 40 to 65 inches

Ap or A horizon:
Hue—10YR
Value—2 or 3
Chroma—1 to 3
Texture—silt loam
Content of rock fragments—none
Reaction—moderately acid to slightly alkaline

AB, BA, and Bt horizons:
Hue—7.5YR or 10YR
Value—3 to 6
Chroma—3 to 6
Texture—silty clay loam or silt loam
Content of rock fragments—none
Reaction—moderately acid to neutral

2Bt horizon or 2BC horizon (where present):
Hue—7.5YR, 10YR, or 2.5Y
Value—4 to 6
Chroma—3 to 6
Texture—loam, sandy loam, sandy clay loam, clay loam, or silt loam; stratified in some pedons
Content of rock fragments—0 to 10 percent
Reaction—moderately acid to neutral

2C horizon:
Hue—7.5YR, 10YR, or 2.5Y
Value—4 to 6
Chroma—3 to 6
Texture—loamy sand, sandy clay loam, sandy loam, loam, or silt loam; stratified in some pedons
Content of rock fragments—0 to 15 percent
Reaction—moderately acid to slightly alkaline

148B2—Proctor silt loam, 2 to 5 percent slopes, eroded

Setting

Landform: Outwash plains
Position on the landform: Summits and backslopes

Map Unit Composition

Proctor and similar soils: 90 percent
Dissimilar soils: 10 percent

Soils of Minor Extent

Similar soils:
- Soils that have less sand in the substratum and/or in the underlying material
- Soils that are not eroded

Dissimilar soils:
- The somewhat poorly drained Elburn soils on toeslopes; in positions below those of the Proctor soil
- The poorly drained Sable soils in swales

Properties and Qualities of the Proctor Soil

Parent material: Loess over stratified loamy outwash
Drainage class: Well drained
Slowest permeability within a depth of 40 inches: Moderate
Permeability below a depth of 60 inches: Moderate
Depth to restrictive feature: More than 80 inches
Available water capacity: About 9.1 inches to a depth of 60 inches
Content of organic matter in the surface layer: 1.5 to 3.5 percent
Shrink-swell potential: Moderate
Ponding: None
Flooding: None
Accelerated erosion: The surface layer has been thinned by erosion.
Potential for frost action: High
Hazard of corrosion: Moderate for steel and concrete
Surface runoff class: Low
Susceptibility to water erosion: Moderate
Susceptibility to wind erosion: Low

Interpretive Groups

Land capability classification: 2e
Prime farmland category: Prime farmland
Hydric soil status: Not hydric

7148B—Proctor silt loam, 2 to 5 percent slopes, rarely flooded

Setting

Landform: Stream terraces and flood-plain steps
Position on the landform: Summits and backslopes

Map Unit Composition

Proctor and similar soils: 90 percent
Dissimilar soils: 10 percent

Soils of Minor Extent

Similar soils:
- Soils that have less sand in the substratum and in the underlying material
- Soils that are eroded
- Soils that are not subject to flooding

Dissimilar soils:
- The somewhat poorly drained Elburn soils on toeslopes; in positions below those of the Proctor soil
- The poorly drained Sawmill soils on flood plains; in positions below those of the Proctor soil

Properties and Qualities of the Proctor Soil

Parent material: Loess or other silty material over outwash
Drainage class: Well drained
Slowest permeability within a depth of 40 inches: Moderate
Permeability below a depth of 60 inches: Moderately rapid
Depth to restrictive feature: More than 80 inches
Available water capacity: About 10.6 inches to a depth of 60 inches
Content of organic matter in the surface layer: 3.0 to 4.0 percent
Shrink-swell potential: Moderate
Ponding: None
Frequency and most likely period of flooding: Rare, November through June
Potential for frost action: High
Hazard of corrosion: Moderate for steel and concrete
Surface runoff class: Low
Susceptibility to water erosion: Low
Susceptibility to wind erosion: Low

Interpretive Groups

Land capability classification: 2e
Prime farmland category: Prime farmland
Hydric soil status: Not hydric

Radford Series

Taxonomic classification: Fine-silty, mixed, superactive, mesic Fluvaquentic Hapludolls

Typical Pedon

Radford silt loam, 0 to 2 percent slopes, occasionally flooded, at an elevation of 673 feet above mean sea level; Bureau County, Illinois; 1,109 feet west and 1,254 feet south of the northeast corner of sec. 23, T. 17 N., R. 8 E.; USGS Buda, Illinois, topographic quadrangle; lat. 41 degrees 26 minutes 55.5 seconds N. and long. 89 degrees 32 minutes 04.3 seconds W.; UTM Zone 16T, 0288285E 4591677N; NAD 83:

Ap—0 to 9 inches; very dark grayish brown (10YR 3/2) silt loam, grayish brown (10YR 5/2) dry; moderate medium granular structure; friable; common fine roots; moderately acid; abrupt smooth boundary.

A—9 to 21 inches; very dark grayish brown (10YR 3/2) silt loam, grayish brown (10YR 5/2) dry; moderate medium granular structure; friable; common fine roots; few fine dark masses of iron and manganese accumulation throughout; slightly acid; gradual smooth boundary.

C—21 to 29 inches; stratified very dark gray (10YR 3/1) silt loam and brown (10YR 5/3) silty clay loam; massive; friable; few fine roots; common fine dark masses of iron-manganese accumulation throughout; slightly acid; clear smooth boundary.

Ab1—29 to 36 inches; black (10YR 2/1) silty clay loam; moderate medium subangular blocky structure; friable; few fine roots; few medium faint very dark grayish brown (10YR 3/2) masses of manganese accumulation in the matrix; few very fine dark masses of iron-manganese accumulation throughout; slightly acid; clear smooth boundary.

Ab2—36 to 43 inches; black (10YR 2/1) silty clay loam; weak medium subangular blocky structure; friable; few fine faint very dark grayish brown (10YR 3/2) masses of manganese accumulation in the matrix; few very fine dark masses of iron-manganese accumulation throughout; neutral; clear smooth boundary.

ABb—43 to 60 inches; black (10YR 2/1) silty clay loam; moderate medium prismatic structure parting to moderate medium subangular blocky; friable; few fine faint dark gray (10YR 4/1) iron depletions in the matrix; few very fine dark masses of iron-manganese accumulation throughout; neutral.

Range in Characteristics

Thickness of the mollic epipedon: 10 to 24 inches
Depth to carbonates: More than 60 inches

Ap and A horizons:
Hue—10YR
Value—2 or 3
Chroma—1 or 2
Texture—silt loam
Content of rock fragments—none
Reaction—moderately acid to slightly alkaline

C or Cg horizon:
Hue—10YR
Value—2 to 6
Chroma—1 to 4
Texture—silty clay loam or silt loam; finely stratified
Content of rock fragments—none
Reaction—slightly acid to slightly alkaline

Ab, ABb, or ABbg horizon:
Hue—10YR or N
Value—2 or 3
Chroma—0 or 1
Texture—silty clay loam, silt loam, clay loam, or loam
Content of rock fragments—none
Reaction—slightly acid to slightly alkaline

Bb or Bbg horizon (where present):
Hue—10YR, 2.5Y, 5Y, or N
Value—3 to 6
Chroma—0 to 2
Texture—silty clay loam, silt loam, clay loam, or loam
Content of rock fragments—none
Reaction—slightly acid to slightly alkaline

8074A—Radford silt loam, 0 to 2 percent slopes, occasionally flooded

Setting

Landform: Flood plains

Map Unit Composition

Radford and similar soils: 88 percent
Dissimilar soils: 12 percent

Soils of Minor Extent

Similar soils:
- Soils that have less clay throughout
- Soils that have a loamy subsoil
- Soils that are subject to frequent flooding

Dissimilar soils:
- The poorly drained Sawmill soils in swales

Properties and Qualities of the Radford Soil

Parent material: Silty alluvium
Drainage class: Somewhat poorly drained
Slowest permeability within a depth of 40 inches: Moderate
Permeability below a depth of 60 inches: Moderate
Depth to restrictive feature: More than 80 inches
Available water capacity: About 12.6 inches to a depth of 60 inches
Content of organic matter in the surface layer: 3.5 to 5.0 percent
Shrink-swell potential: Moderate
Depth and months of highest apparent seasonal high water table: 1 foot, January through May
Ponding: None
Frequency and most likely period of flooding: Occasional, November through June
Potential for frost action: High
Hazard of corrosion: High for steel and low for concrete
Surface runoff class: Negligible
Susceptibility to water erosion: Low
Susceptibility to wind erosion: Low

Interpretive Groups

Land capability classification: 2w
Prime farmland category: Prime farmland
Hydric soil status: Not hydric

Ross Series

Taxonomic classification: Fine-loamy, mixed, superactive, mesic Cumulic Hapludolls

Typical Pedon

Ross silt loam, 0 to 2 percent slopes, frequently flooded, at an elevation of 590 feet above mean sea level; Tazewell County, Illinois; 1,490 feet west and 232 feet north of the southeast corner of sec. 28, T. 23 N., R. 3 W.; USGS Hopedale, Illinois, topographic quadrangle; lat. 40 degrees 24 minutes 38.7 seconds N. and long. 89 degrees 26 minutes 32.0 seconds W.; UTM Zone 16T, 0292777E 4476209N; NAD 83:

Ap—0 to 8 inches; very dark gray (10YR 3/1) silt loam, dark grayish brown (10YR 4/2) dry; weak fine granular structure; friable; common very fine roots; neutral; clear smooth boundary.

A—8 to 13 inches; very dark grayish brown (10YR 3/2) silt loam, dark grayish brown (10YR 4/2) dry; weak fine subangular blocky structure parting to weak fine granular; friable; common very fine and fine roots; common faint very dark gray (10YR 3/1) organic coatings on faces of peds; neutral; clear smooth boundary.

Bw1—13 to 27 inches; very dark grayish brown (10YR 3/2) loam, dark grayish brown (10YR 4/2) dry; weak fine subangular blocky structure; friable; few very fine roots; few faint very dark gray (10YR 3/1) organic coatings on faces of peds; neutral; gradual smooth boundary.

Bw2—27 to 34 inches; dark brown (10YR 3/3) loam, brown (10YR 4/3) dry; weak fine and medium subangular blocky structure; friable; few very fine and coarse roots; common distinct very dark gray (10YR 3/1) and few faint very dark grayish brown (10YR 3/2) organic coatings on faces of peds; neutral; gradual smooth boundary.

Bw3—34 to 43 inches; brown (10YR 4/3) loam; weak medium subangular blocky structure; very friable; few very fine roots; many distinct very dark grayish brown (10YR 3/2) organic coatings on faces of peds; neutral; gradual smooth boundary.

C1—43 to 54 inches; brown (10YR 4/3) sandy loam; massive; very friable; few very fine and fine roots; neutral; gradual smooth boundary.

C2—54 to 60 inches; brown (10YR 4/3) sandy loam; massive; very friable; few fine faint grayish brown (10YR 5/2) iron depletions; 5 percent gravel; neutral.

Range in Characteristics

Thickness of the mollic epipedon: 24 to 40 inches
Depth to carbonates: 24 to 45 inches
Depth to the base of the cambic horizon: 24 to 45 inches

Ap and A horizons:
Hue—10YR
Value—2 or 3
Chroma—1 to 3
Texture—silt loam
Content of rock fragments—0 to 6 percent
Reaction—slightly acid or neutral

Bw horizon:
Hue—10YR
Value—2 to 5
Chroma—1 to 4
Texture—loam or silt loam
Content of rock fragments—0 to 10 percent
Reaction—slightly acid to slightly alkaline

C horizon:
Hue—7.5YR, 10YR, or 2.5Y
Value—4 to 6
Chroma—1 to 4
Texture—stratified sandy loam to silt loam
Content of rock fragments—0 to 15 percent
Reaction—slightly acid to moderately alkaline

3073A—Ross silt loam, 0 to 2 percent slopes, frequently flooded

Setting

Landform: Flood-plain steps and flood plains

Map Unit Composition

Ross and similar soils: 91 percent
Dissimilar soils: 9 percent

Soils of Minor Extent

Similar soils:
- Soils that are more gray in the lower part of the subsoil
- Soils that have a silty subsoil
- Soils that have less clay in the subsoil
- Soils that have a thin dark surface layer
- Soils that have carbonates at a depth of more than 45 inches
- Soils that are subject to less than frequent flooding

Dissimilar soils:
- The somewhat poorly drained Lawson and Radford soils in positions lower on the flood plain than those of the Ross soil
- The poorly drained Sawmill soils in swales

Properties and Qualities of the Ross Soil

Parent material: Loamy alluvium
Drainage class: Well drained
Slowest permeability within a depth of 40 inches: Moderate
Permeability below a depth of 60 inches: Moderate or moderately rapid
Depth to restrictive feature: More than 80 inches
Available water capacity: About 10.6 inches to a depth of 60 inches
Content of organic matter in the surface layer: 2.0 to 4.0 percent
Shrink-swell potential: Low
Depth and months of highest apparent seasonal high water table: 4 feet, February through April
Ponding: None
Frequency and most likely period of flooding: Frequent, November through June
Potential for frost action: Moderate
Hazard of corrosion: Low for steel and concrete
Surface runoff class: Low
Susceptibility to water erosion: Low
Susceptibility to wind erosion: Low

Interpretive Groups

Land capability classification: 3w
Prime farmland category: Prime farmland where protected from flooding or not frequently flooded during the growing season
Hydric soil status: Not hydric

Rozetta Series

Taxonomic classification: Fine-silty, mixed, superactive, mesic Typic Hapludalfs
Taxadjunct features: The Rozetta soil in map unit 279B2 has till between the depths of 60 and 80 inches. The till results in a perched water table, which causes this soil

to be slightly grayer than is defined as the range for the series. This difference, however, does not significantly affect the use or behavior of the soil. This soil is classified as a fine-silty, mixed, superactive, mesic Oxyaquic Hapludalf.

Typical Pedon

Rozetta silt loam, 2 to 5 percent slopes, at an elevation of 605 feet above mean sea level; Fulton County, Illinois; 2,710 feet west and 485 feet north of the southeast corner of sec. 15, T. 4 N., R. 2 E.; USGS Ipava, Illinois, topographic quadrangle; lat. 40 degrees 19 minutes 15.1 seconds N. and long. 90 degrees 15 minutes 59 seconds W.; UTM Zone 15T, 0732258E 4466957N; NAD 83:

Ap—0 to 7 inches; brown (10YR 4/3) silt loam, pale brown (10YR 6/3) dry; weak very fine granular structure; friable; common very fine and few fine roots; neutral; clear smooth boundary.

E—7 to 11 inches; brown (10YR 4/3) silt loam; weak medium platy structure parting to weak very fine subangular blocky; friable; common very fine roots; few distinct light gray (10YR 7/2) (dry) silt coatings on faces of peds; neutral; clear smooth boundary.

Bt1—11 to 19 inches; yellowish brown (10YR 5/4) silty clay loam; moderate fine subangular blocky structure; friable; common very fine roots; common distinct dark yellowish brown (10YR 4/4) clay films and few distinct light gray (10YR 7/2) (dry) silt coatings on faces of peds; few fine black (10YR 2/1) manganese concretions with sharp boundaries in ped interiors; moderately acid; clear smooth boundary.

Bt2—19 to 29 inches; yellowish brown (10YR 5/4) silty clay loam; moderate medium prismatic structure parting to moderate medium subangular blocky; friable; common very fine roots; few distinct dark yellowish brown (10YR 4/4) clay films and few distinct light gray (10YR 7/2) (dry) silt coatings on faces of peds; few fine distinct dark yellowish brown (10YR 4/6) masses of iron and manganese accumulation with diffuse boundaries and few fine black (10YR 2/1) manganese concretions with sharp boundaries in ped interiors; moderately acid; gradual smooth boundary.

Bt3—29 to 39 inches; 80 percent yellowish brown (10YR 5/4), 15 percent yellowish brown (10YR 5/6), and 5 percent pale brown (10YR 6/3) silty clay loam; weak medium prismatic structure parting to moderate medium subangular blocky; friable; few very fine roots; common distinct dark yellowish brown (10YR 4/4) clay films on faces of peds; few fine distinct dark yellowish brown (10YR 4/6) masses of iron and manganese accumulation with diffuse boundaries and common fine black (10YR 2/1) manganese concretions with sharp boundaries in ped interiors; strongly acid; gradual smooth boundary.

Bt4—39 to 45 inches; 60 percent yellowish brown (10YR 5/4), 20 percent yellowish brown (10YR 5/6), and 20 percent pale brown (10YR 6/3) silty clay loam; weak coarse prismatic structure parting to moderate coarse subangular blocky; friable; few very fine roots; few distinct dark yellowish brown (10YR 4/4) clay films on faces of peds; few fine distinct dark yellowish brown (10YR 4/6) masses of iron and manganese accumulation with diffuse boundaries and few fine black (10YR 2/1) manganese concretions with sharp boundaries in ped interiors; moderately acid; gradual smooth boundary.

BC—45 to 55 inches; 70 percent yellowish brown (10YR 5/4) and 30 percent yellowish brown (10YR 5/6) silty clay loam; weak coarse prismatic structure; friable; few very fine roots; few distinct dark yellowish brown (10YR 4/4) clay films on faces of peds; common fine distinct dark yellowish brown (10YR 4/6) masses of iron and manganese accumulation with diffuse boundaries and few fine black (10YR 2/1) manganese concretions with sharp boundaries in ped interiors; common fine distinct light brownish gray (10YR 6/2) iron depletions along root channels and pores; moderately acid; gradual smooth boundary.

C—55 to 60 inches; yellowish brown (10YR 5/6) silt loam; massive; friable; few very fine roots; common fine distinct dark yellowish brown (10YR 4/6) masses of iron and manganese accumulation with diffuse boundaries and few fine black (10YR 2/1) manganese concretions with sharp boundaries in ped interiors; few fine prominent light brownish gray (10YR 6/2) iron depletions along pores; slightly acid.

Range in Characteristics

Thickness of the loess: More than 60 inches
Depth to carbonates: More than 60 inches
Depth to the base of the argillic horizon: 42 to 72 inches

Ap or A horizon:
Hue—10YR
Value—3 to 5
Chroma—1 to 3
Texture—silt loam
Content of rock fragments—none
Reaction—very strongly acid to neutral

E horizon (not in all pedons):
Hue—10YR
Value—4 to 6
Chroma—2 or 3
Texture—silt loam
Content of rock fragments—none
Reaction—very strongly acid to moderately acid

Bt horizon:
Hue—10YR or 7.5YR
Value—4 to 6
Chroma—3 to 6
Texture—silty clay loam
Content of rock fragments—none
Reaction—very strongly acid to neutral

C horizon:
Hue—10YR
Value—4 to 6
Chroma—2 to 6
Texture—silt loam or silty clay loam
Content of rock fragments—none
Reaction—slightly acid to moderately alkaline

2C horizon (where present below a depth of 60 inches):
Hue—7.5YR, 10YR, or 2.5Y
Value—4 to 6
Chroma—2 to 6
Texture—loam or clay loam
Content of rock fragments—0 to 14 percent
Reaction—neutral to moderately alkaline

279B—Rozetta silt loam, 2 to 5 percent slopes

Setting

Landform: Ground moraines
Position on the landform: Shoulders and summits

Map Unit Composition

Rozetta and similar soils: 91 percent
Dissimilar soils: 9 percent

Soils of Minor Extent

Similar soils:
- Soils that are less gray in the lower part of the subsoil
- Soils that have more sand and gravel in the substratum and/or in the underlying material
- Soils that have a darker surface layer

Dissimilar soils:
- The poorly drained Sable soils in swales

Properties and Qualities of the Rozetta Soil

Parent material: Loess
Drainage class: Well drained
Slowest permeability within a depth of 40 inches: Moderate
Permeability below a depth of 60 inches: Moderate
Depth to restrictive feature: More than 80 inches
Available water capacity: About 12.3 inches to a depth of 60 inches
Content of organic matter in the surface layer: 1.0 to 3.0 percent
Shrink-swell potential: Moderate
Depth and months of highest apparent seasonal high water table: 4 feet, February through April
Ponding: None
Flooding: None
Potential for frost action: High
Hazard of corrosion: Moderate for steel and high for concrete
Surface runoff class: Low
Susceptibility to water erosion: Moderate
Susceptibility to wind erosion: Low

Interpretive Groups

Land capability classification: 2e
Prime farmland category: Prime farmland
Hydric soil status: Not hydric

279B2—Rozetta silt loam, 2 to 5 percent slopes, eroded

Setting

Landform: Ground moraines
Position on the landform: Backslopes, shoulders, and summits

Map Unit Composition

Rozetta and similar soils: 93 percent
Dissimilar soils: 7 percent

Soils of Minor Extent

Similar soils:
- Soils that are more gray in the lower part of the subsoil
- Soils that have less sand and gravel in the substratum and/or in the underlying material

- Soils that have a darker surface layer
- Soils that have a root-restrictive substratum

Dissimilar soils:

- The poorly drained Sable soils in swales

Properties and Qualities of the Rozetta Soil

Parent material: Very deep loess over till
Drainage class: Moderately well drained
Slowest permeability within a depth of 40 inches: Moderate
Permeability below a depth of 60 inches: Moderately slow
Depth to restrictive feature: More than 80 inches
Available water capacity: About 11.1 inches to a depth of 60 inches
Content of organic matter in the surface layer: 0.5 to 2.0 percent
Shrink-swell potential: Moderate
Depth and months of highest perched seasonal high water table: 2 feet, February through April
Ponding: None
Flooding: None
Accelerated erosion: The surface layer has been thinned by erosion.
Potential for frost action: High
Hazard of corrosion: Moderate for steel and concrete
Surface runoff class: Low
Susceptibility to water erosion: Moderate
Susceptibility to wind erosion: Low

Interpretive Groups

Land capability classification: 2e
Prime farmland category: Prime farmland
Hydric soil status: Not hydric

Russell Series

Taxonomic classification: Fine-silty, mixed, superactive, mesic Typic Hapludalfs

Typical Pedon

Russell silt loam, 5 to 10 percent slopes, eroded, on a slope of 8 percent at an elevation of 738 feet above mean sea level; Edgar County, Illinois; 115 feet north and 235 feet west of the center of sec. 18, T. 12 N., R. 13 W.; USGS Westfield East, Illinois, topographic quadrangle; lat. 39 degrees 29 minutes 23.5 seconds N. and long. 87 degrees 53 minutes 48.4 seconds W.; UTM Zone 16T, 0422885E 4371522N; NAD 83:

Ap—0 to 7 inches; brown (10YR 4/3) silt loam, light brownish gray (10YR 6/2) dry; mixed with few pockets of yellowish brown (10YR 5/4) subsoil material in the lower part; moderate very fine and fine granular structure; friable; many very fine roots; few fine rounded black (10YR 2/1) very weakly cemented iron-manganese concretions throughout; slightly acid; abrupt smooth boundary.

Bt1—7 to 13 inches; yellowish brown (10YR 5/4) silty clay loam; moderate fine subangular blocky structure; friable; common very fine roots; common distinct brown (10YR 5/3) clay films on faces of peds; few fine rounded black (10YR 2/1) very weakly cemented iron-manganese concretions throughout; very strongly acid; clear smooth boundary.

Bt2—13 to 21 inches; yellowish brown (10YR 5/6) silty clay loam; moderate fine and medium subangular blocky structure; firm; common very fine roots; common

distinct dark yellowish brown (10YR 4/4) clay films on faces of peds; few fine rounded black (10YR 2/1) very weakly cemented iron-manganese concretions throughout; very strongly acid; clear smooth boundary.

Bt3—21 to 27 inches; yellowish brown (10YR 5/4) silty clay loam; weak medium prismatic structure parting to moderate medium angular blocky; firm; few very fine roots; common distinct light yellowish brown (10YR 6/4) clay depletions on faces of peds; common distinct brown (7.5YR 4/4) clay films on faces of peds; few fine rounded black (10YR 2/1) very weakly cemented iron-manganese concretions throughout; very strongly acid; clear smooth boundary.

2Bt4—27 to 36 inches; yellowish brown (10YR 5/4) clay loam; moderate medium and coarse subangular blocky structure; firm; few very fine roots; common distinct light yellowish brown (10YR 6/4) clay depletions on faces of peds; few distinct brown (7.5YR 4/4) clay films on faces of peds; few fine rounded black (10YR 2/1) very weakly cemented iron-manganese concretions throughout; 2 percent fine gravel; neutral; clear smooth boundary.

2Bt5—36 to 56 inches; strong brown (7.5YR 5/6) clay loam; weak coarse subangular blocky structure; firm; few very fine roots; few distinct brown (10YR 4/3) clay films on faces of peds; few distinct dark brown (10YR 3/3) organo-clay films lining root channels and pores; few prominent black (10YR 2/1) iron and manganese coatings on faces of peds; few fine and medium rounded black (10YR 2/1) very weakly cemented iron-manganese concretions throughout; 5 percent fine gravel; neutral; gradual smooth boundary.

2Cd—56 to 72 inches; yellowish brown (10YR 5/4) loam; massive; firm; few fine rounded black (10YR 2/1) very weakly cemented iron-manganese concretions throughout; 5 percent fine gravel; very slightly effervescent; moderately alkaline.

Range in Characteristics

Thickness of the loess: 20 to 40 inches
Depth to carbonates: 40 to 60 inches
Depth to the base of the argillic horizon: 40 to 60 inches

Ap horizon:
Hue—10YR
Value—4 or 5
Chroma—2 or 3
Texture—silt loam or silty clay loam
Content of rock fragments—none
Reaction—strongly acid to neutral

Bt horizon:
Hue—7.5YR, 10YR, or 2.5Y
Value—4 or 5
Chroma—3 to 6
Texture—silty clay loam or silt loam
Content of rock fragments—none
Reaction—very strongly acid to neutral

2Bt horizon:
Hue—7.5YR, 10YR, or 2.5Y
Value—4 or 5
Chroma—3 to 6
Texture—clay loam, loam, or silty clay loam
Content of rock fragments—1 to 10 percent
Reaction—moderately acid to neutral

2Cd horizon:
Hue—7.5YR, 10YR, or 2.5Y
Value—4 or 5
Chroma—3 to 6
Texture—loam or clay loam
Content of rock fragments—1 to 14 percent
Reaction—neutral to moderately alkaline

322C2—Russell silt loam, 5 to 10 percent slopes, eroded

Setting

Landform: Ground moraines and end moraines
Position on the landform: Backslopes and shoulders

Map Unit Composition

Russell and similar soils: 92 percent
Dissimilar soils: 8 percent

Soils of Minor Extent

Similar soils:
- Soils that have a loamy subsoil
- Soils that do not have a root-restrictive substratum
- Soils that are silty in the substratum and/or in the underlying material
- Soils that are more gray in the lower part of the subsoil
- Soils that have carbonates closer to the surface
- Soils that have a dark surface layer

Dissimilar soils:
- The poorly drained Sable soils in swales

Properties and Qualities of the Russell Soil

Parent material: Loess over till
Drainage class: Well drained
Slowest permeability within a depth of 40 inches: Moderate
Permeability below a depth of 60 inches: Moderately slow
Depth to restrictive feature: 40 to 60 inches to dense material
Available water capacity: About 8.9 inches to a depth of 60 inches
Content of organic matter in the surface layer: 0.5 to 2.0 percent
Shrink-swell potential: Moderate
Ponding: None
Flooding: None
Accelerated erosion: The surface layer has been thinned by erosion.
Potential for frost action: High
Hazard of corrosion: Moderate for steel and concrete
Surface runoff class: Medium
Susceptibility to water erosion: High
Susceptibility to wind erosion: Low

Interpretive Groups

Land capability classification: 3e
Prime farmland category: Not prime farmland
Hydric soil status: Not hydric

322D3—Russell silty clay loam, 10 to 18 percent slopes, severely eroded

Setting

Landform: Ground moraines and end moraines
Position on the landform: Backslopes and shoulders

Map Unit Composition

Russell and similar soils: 92 percent
Dissimilar soils: 8 percent

Soils of Minor Extent

Similar soils:
- Soils that have a loamy subsoil
- Soils that are silty in the substratum and/or in the underlying material
- Soils that are more gray in the lower part of the subsoil
- Soils that have carbonates closer to the surface
- Soils that have a surface layer of silt loam
- Soils that do not have a root-restrictive substratum

Dissimilar soils:
- The somewhat poorly drained Keomah soils on toeslopes or in swales
- The poorly drained Sable soils in swales

Properties and Qualities of the Russell Soil

Parent material: Loess over till
Drainage class: Well drained
Slowest permeability within a depth of 40 inches: Moderate
Permeability below a depth of 60 inches: Moderately slow
Depth to restrictive feature: 40 to 60 inches to dense material
Available water capacity: About 8.4 inches to a depth of 60 inches
Content of organic matter in the surface layer: 0.3 to 1.0 percent
Shrink-swell potential: Moderate
Ponding: None
Flooding: None
Accelerated erosion: The surface layer is mostly subsoil material.
Potential for frost action: High
Hazard of corrosion: Moderate for steel and concrete
Surface runoff class: Medium
Susceptibility to water erosion: High
Susceptibility to wind erosion: Low

Interpretive Groups

Land capability classification: 4e
Prime farmland category: Not prime farmland
Hydric soil status: Not hydric

Sable Series

Taxonomic classification: Fine-silty, mixed, superactive, mesic Typic Endoaquolls

Typical Pedon

Sable silty clay loam, 0 to 2 percent slopes, at an elevation of 732 feet above mean sea level; Warren County, Illinois; 97 feet west and 1,281 feet south of the northeast

corner of sec. 14, T. 9 N., R. 3 W.; USGS Kirkwood East, Illinois, topographic quadrangle; lat. 40 degrees 46 minutes 22.5 seconds N. and long. 90 degrees 41 minutes 34.2 seconds W.; UTM Zone 15T, 0694708E 4516111N; NAD 83:

Ap—0 to 8 inches; black (10YR 2/1) silty clay loam, dark gray (10YR 4/1) dry; moderate fine and medium granular structure; firm; moderately acid; abrupt smooth boundary.

A—8 to 19 inches; black (10YR 2/1) silty clay loam, dark gray (10YR 4/1) dry; moderate very fine angular blocky structure; firm; few fine rounded dark reddish brown (5YR 3/2) very weakly cemented iron-manganese concretions throughout; slightly acid; clear smooth boundary.

AB—19 to 23 inches; very dark gray (10YR 3/1) silty clay loam, grayish brown (10YR 5/2) dry; moderate fine angular blocky structure; firm; few faint very dark grayish brown (10YR 3/2) organic coatings on faces of peds; few fine rounded dark reddish brown (5YR 3/2) very weakly cemented iron-manganese concretions throughout; slightly acid; clear smooth boundary.

Bg—23 to 29 inches; dark gray (10YR 4/1) silty clay loam; moderate fine and medium subangular blocky structure; firm; common faint very dark gray (10YR 3/1) organic coatings on faces of peds; common medium distinct brown (10YR 5/3) masses of iron and manganese accumulation in the matrix; few medium faint dark grayish brown (10YR 4/2) iron depletions in the matrix; common fine and medium rounded dark reddish brown (5YR 3/2) very weakly cemented iron-manganese concretions throughout; neutral; clear smooth boundary.

Btg1—29 to 38 inches; grayish brown (2.5Y 5/2) silty clay loam; moderate medium and coarse subangular blocky structure; firm; few distinct dark gray (10YR 4/1) clay films on faces of peds; many medium prominent yellowish brown (10YR 5/6) masses of iron accumulation in the matrix; many fine and medium rounded dark reddish brown (5YR 3/2) very weakly cemented iron-manganese concretions throughout; neutral; clear wavy boundary.

Btg2—38 to 47 inches; gray (N 5/) silt loam; weak medium prismatic structure parting to weak medium and coarse angular blocky; firm; few distinct grayish brown (10YR 5/2) clay films on faces of prisms; many medium prominent yellowish brown (10YR 5/6) masses of iron accumulation in the matrix; common fine rounded dark reddish brown (5YR 3/2) very weakly cemented iron-manganese concretions throughout; slightly alkaline; gradual smooth boundary.

Cg—47 to 60 inches; gray (N 6/) silt loam; massive; friable; many medium prominent yellowish brown (10YR 5/6) masses of iron accumulation in the matrix; slightly effervescent; slightly alkaline.

Range in Characteristics

Thickness of the mollic epipedon: 10 to 24 inches
Thickness of the loess: More than 60 inches
Depth to carbonates: More than 40 inches
Depth to the base of the cambic horizon: 40 to 60 inches

Ap, A, and AB horizons:
Hue—10YR, 2.5Y, 5Y, or N
Value—2 or 3
Chroma—0 or 1
Texture—silty clay loam
Content of rock fragments—none
Reaction—moderately acid to neutral

Bg or Btg horizon:
Hue—10YR, 2.5Y, 5Y, or N
Value—3 to 6

Chroma—0 to 2
Texture—silty clay loam or silt loam
Content of rock fragments—none
Reaction—moderately acid to slightly alkaline

Cg horizon:
Hue—10YR, 2.5Y, 5Y, or N
Value—3 to 6
Chroma—0 to 2
Texture—silty clay loam or silt loam
Content of rock fragments—none
Reaction—neutral to moderately alkaline

68A—Sable silty clay loam, 0 to 2 percent slopes

Setting

Landform: Ground moraines
Position on the landform: Toeslopes

Map Unit Composition

Sable and similar soils: 85 percent
Dissimilar soils: 15 percent

Soils of Minor Extent

Similar soils:
- Soils that have more clay in the subsoil
- Soils that have carbonates closer to the surface
- Soils that have a thick dark surface layer
- Soils that have more sand in the lower part of the subsoil and in the substratum

Dissimilar soils:
- The moderately well drained Catlin and well drained Osco soils in the more sloping areas; in positions above those of the Sable soil
- The somewhat poorly drained Ipava soils on slight rises

Properties and Qualities of the Sable Soil

Parent material: Loess
Drainage class: Poorly drained
Slowest permeability within a depth of 40 inches: Moderate
Permeability below a depth of 60 inches: Moderate
Depth to restrictive feature: More than 80 inches
Available water capacity: About 10.5 inches to a depth of 60 inches
Content of organic matter in the surface layer: 4.5 to 6.0 percent
Shrink-swell potential: Moderate
Depth and months of highest apparent seasonal high water table: At the surface, January through May
Duration and most likely period of ponding: Brief, January through May
Flooding: None
Potential for frost action: High
Hazard of corrosion: High for steel and low for concrete
Surface runoff class: Negligible
Susceptibility to water erosion: Low
Susceptibility to wind erosion: Low

Interpretive Groups

Land capability classification: 2w
Prime farmland category: Prime farmland where drained
Hydric soil status: Hydric

Sawmill Series

Taxonomic classification: Fine-silty, mixed, superactive, mesic Cumulic Endoaquolls

Typical Pedon

Sawmill silty clay loam, 0 to 2 percent slopes, frequently flooded, at an elevation of 535 feet above mean sea level; Sangamon County, Illinois; 750 feet east and 300 feet south of the northwest corner of sec. 20, T. 15 N., R. 4 W.; USGS New City, Illinois, topographic quadrangle; lat. 39 degrees 44 minutes 34.2 seconds N. and long. 89 degrees 34 minutes 15.3 seconds W.; UTM Zone 16S, 0279712E 4402375N; NAD 83:

Ap—0 to 10 inches; very dark gray (10YR 3/1) and very dark grayish brown (10YR 3/2) silty clay loam, gray (10YR 5/1) dry; weak fine subangular blocky structure; firm; few fine roots; few subrounded pebbles 1 to 3 mm in diameter; slightly acid; clear smooth boundary.

A1—10 to 17 inches; black (10YR 2/1) and very dark grayish brown (10YR 3/2) silty clay loam, dark gray (10YR 4/1) dry; moderate fine subangular blocky structure; firm; few fine roots; few subrounded pebbles 1 to 3 mm in diameter; few fine faint rounded black (7.5YR 2.5/1) weakly cemented iron-manganese concretions with diffuse boundaries lining root channels and pores; few fine prominent yellowish brown (10YR 5/6) masses of iron accumulation in the matrix; neutral; clear smooth boundary.

A2—17 to 25 inches; black (10YR 2/1) silty clay loam, dark gray (10YR 4/1) dry; moderate fine and medium angular blocky structure; firm; few fine roots; few fine faint rounded black (7.5YR 2.5/1) weakly cemented iron-manganese concretions with diffuse boundaries lining root channels and pores; few fine prominent yellowish brown (10YR 5/6) masses of iron accumulation in the matrix; neutral; clear smooth boundary.

AB—25 to 32 inches; very dark gray (10YR 3/1) silty clay loam, gray (10YR 5/1) dry; weak medium prismatic structure parting to moderate fine subangular blocky; firm; few fine roots; few fine faint rounded black (7.5YR 2.5/1) weakly cemented iron-manganese concretions with diffuse boundaries lining root channels and pores; few fine prominent yellowish brown (10YR 5/6) masses of iron accumulation in the matrix; neutral; clear smooth boundary.

Bg—32 to 40 inches; dark gray (10YR 4/1) silty clay loam; weak medium prismatic structure parting to moderate fine and medium angular blocky; firm; few fine roots; common faint very dark gray (10YR 3/1) organic coatings on faces of peds; few fine faint rounded black (7.5YR 2.5/1) weakly cemented iron-manganese concretions with diffuse boundaries lining root channels and pores; few fine prominent strong brown (7.5YR 5/6) masses of iron accumulation in the matrix; slightly alkaline; clear smooth boundary.

Btg1—40 to 49 inches; grayish brown (10YR 5/2) silty clay loam; moderate medium prismatic structure parting to weak medium angular blocky; firm; common distinct dark gray (10YR 4/1) clay films on faces of peds; few fine distinct rounded black (7.5YR 2.5/1) weakly cemented iron-manganese concretions with diffuse boundaries lining root channels and pores; few fine prominent strong brown (7.5YR 5/6) masses of iron accumulation and common fine distinct yellowish brown (10YR 5/4) masses of iron and manganese accumulation in the matrix; slightly alkaline; clear smooth boundary.

Btg2—49 to 58 inches; grayish brown (2.5Y 5/2) silty clay loam; moderate medium prismatic structure; firm; many thin gray (10YR 5/1) clay films on faces of peds; few fine prominent rounded black (7.5YR 2.5/1) weakly cemented iron-manganese concretions with diffuse boundaries lining pores; few fine prominent yellowish brown (10YR 5/6) masses of iron accumulation in the matrix; slightly alkaline; clear smooth boundary.

Cg—58 to 65 inches; grayish brown (2.5Y 5/2) silty clay loam; massive; firm; very dark gray (10YR 3/1) channel linings and fillings; many medium prominent yellowish brown (10YR 5/6) masses of iron accumulation lining pores; slightly alkaline.

Range in Characteristics

Thickness of the mollic epipedon: 24 to 36 inches
Depth to carbonates: More than 40 inches
Depth to the base of the cambic horizon: 36 to 60 inches

Ap, A, and AB horizons:
Hue—10YR, 2.5Y, 5Y, or N
Value—2 or 3
Chroma—0 to 2
Texture—silty clay loam
Content of rock fragments—0 to 2 percent
Reaction—slightly acid to slightly alkaline

Bg and Btg horizons:
Hue—10YR, 2.5Y, or 5Y
Value—3 to 6
Chroma—1 or 2
Texture—silty clay loam
Content of rock fragments—0 to 2 percent
Reaction—slightly acid to slightly alkaline

Cg horizon:
Hue—10YR, 2.5Y, or 5Y
Value—3 to 6
Chroma—1 or 2
Texture—silty clay loam or clay loam; stratified with other textures in some pedons
Content of rock fragments—0 to 2 percent
Reaction—slightly acid to slightly alkaline

3107A—Sawmill silty clay loam, 0 to 2 percent slopes, frequently flooded

Setting

Landform: Flood plains

Map Unit Composition

Sawmill and similar soils: 92 percent
Dissimilar soils: 8 percent

Soils of Minor Extent

Similar soils:
- Soils that have a thin dark surface layer
- Soils that are subject to less than frequent flooding

Dissimilar soils:
- The well drained Ross soils in positions higher on the landscape than those of the Sawmill soil
- The somewhat poorly drained Lawson soils on slight rises

Properties and Qualities of the Sawmill Soil

Parent material: Silty alluvium
Drainage class: Poorly drained
Slowest permeability within a depth of 40 inches: Moderate
Permeability below a depth of 60 inches: Moderate
Depth to restrictive feature: More than 80 inches
Available water capacity: About 9.0 inches to a depth of 60 inches
Content of organic matter in the surface layer: 4.5 to 7.0 percent
Shrink-swell potential: Moderate
Depth and months of highest apparent seasonal high water table: At the surface, January through May
Duration and most likely period of ponding: Brief, January through May
Frequency and most likely period of flooding: Frequent, November through June
Potential for frost action: High
Hazard of corrosion: High for steel and low for concrete
Surface runoff class: Negligible
Susceptibility to water erosion: Low
Susceptibility to wind erosion: Low

Interpretive Groups

Land capability classification: 3w
Prime farmland category: Prime farmland where drained and either protected from flooding or not frequently flooded during the growing season
Hydric soil status: Hydric

8107A—Sawmill silty clay loam, 0 to 2 percent slopes, occasionally flooded

Setting

Landform: Flood plains

Map Unit Composition

Sawmill and similar soils: 90 percent
Dissimilar soils: 10 percent

Soils of Minor Extent

Similar soils:
- Soils that have a thin dark surface layer
- Soils that are subject to frequent flooding

Dissimilar soils:
- The well drained Ross soils in positions higher on the landscape than those of the Sawmill soil
- The somewhat poorly drained Lawson soils on slight rises

Properties and Qualities of the Sawmill Soil

Parent material: Silty alluvium
Drainage class: Poorly drained
Slowest permeability within a depth of 40 inches: Moderate

Permeability below a depth of 60 inches: Moderate
Depth to restrictive feature: More than 80 inches
Available water capacity: About 11.6 inches to a depth of 60 inches
Content of organic matter in the surface layer: 4.0 to 7.0 percent
Shrink-swell potential: Moderate
Depth and months of highest apparent seasonal high water table: At the surface, January through May
Duration and most likely period of ponding: Brief, January through May
Frequency and most likely period of flooding: Occasional, November through June
Potential for frost action: High
Hazard of corrosion: High for steel and low for concrete
Surface runoff class: Negligible
Susceptibility to water erosion: Low
Susceptibility to wind erosion: Low

Interpretive Groups

Land capability classification: 2w
Prime farmland category: Prime farmland where drained
Hydric soil status: Hydric

Senachwine Series

Taxonomic classification: Fine-loamy, mixed, active, mesic Typic Hapludalfs

Typical Pedon

Senachwine silt loam, 35 to 60 percent slopes, at an elevation of 716 feet above mean sea level; De Witt County, Illinois; 1,056 feet east and 1,782 feet north of the southwest corner of sec. 26, T. 20 N., R. 3 E.; USGS De Witt, Illinois, topographic quadrangle; lat. 40 degrees 09 minutes 41.6 seconds N. and long. 88 degrees 50 minutes 10.4 seconds W.; UTM Zone 16T, 0343626E 4447306N; NAD 83:

A—0 to 5 inches; very dark gray (10YR 3/1) silt loam, gray (10YR 5/1) dry; weak fine subangular blocky structure; friable; few fine rock fragments; slightly acid; abrupt smooth boundary.

E—5 to 7 inches; brown (10YR 5/3) silt loam; weak medium platy structure; friable; few fine rock fragments; moderately acid; clear smooth boundary.

BEt—7 to 11 inches; yellowish brown (10YR 5/6) silt loam; moderate fine subangular blocky structure; friable; few faint dark brown (10YR 3/3) organo-clay films on faces of peds; few fine rock fragments; moderately acid; clear smooth boundary.

Bt1—11 to 21 inches; brown (10YR 4/3) clay loam; moderate medium subangular blocky structure; friable; many faint dark brown (10YR 3/3) organo-clay films on faces of peds; few fine iron stains within peds; few fine and few medium rock fragments; strongly acid; clear smooth boundary.

Bt2—21 to 30 inches; brown (10YR 4/3) clay loam; weak coarse prismatic structure parting to weak medium angular blocky; firm; common faint dark brown (10YR 3/3) clay films on faces of peds; few fine iron stains within peds; few fine distinct yellowish brown (10YR 5/6) masses of iron accumulation; few fine and few medium rock fragments; strongly acid; clear smooth boundary.

Bt3—30 to 38 inches; dark yellowish brown (10YR 4/4) clay loam; weak coarse prismatic structure; firm; few faint dark brown (10YR 3/3) clay films on faces of peds; few fine stains of iron within peds; few fine distinct yellowish brown (10YR 5/6) masses of iron accumulation; common fine and few medium rock fragments; neutral; clear smooth boundary.

BC—38 to 49 inches; dark yellowish brown (10YR 4/4) loam; weak coarse prismatic structure; firm; few fine stains of iron within peds; few fine distinct yellowish brown (10YR 5/6) masses of iron accumulation; common fine and few medium rock fragments; slightly effervescent; slightly alkaline; clear smooth boundary.

C—49 to 60 inches; brown (10YR 5/3) loam; massive; firm; few fine distinct yellowish brown (10YR 5/6) masses of iron accumulation; common fine and few medium rock fragments; strongly effervescent; slightly alkaline.

Range in Characteristics

Thickness of the loess: 0 to 18 inches
Depth to carbonates: 20 to 40 inches
Depth to the base of the argillic horizon: 24 to 40 inches

A horizon:
Hue—10YR
Value—3 to 5
Chroma—1 to 4
Texture—silt loam; clay loam in severely eroded areas
Content of rock fragments—0 to 3 percent
Reaction—moderately acid to neutral

E horizon (not in all pedons):
Hue—10YR
Value—4 or 5
Chroma—2 to 4
Texture—silt loam
Content of rock fragments—0 to 3 percent
Reaction—moderately acid to neutral

Bt or 2Bt horizon:
Hue—7.5YR, 10YR, or 2.5Y
Value—4 to 6
Chroma—3 to 6
Texture—silty clay loam, clay loam, or loam
Content of rock fragments—1 to 10 percent
Reaction—strongly acid to neutral

BC or 2BC horizon (not in all pedons):
Hue—7.5YR, 10YR, or 2.5Y
Value—4 to 6
Chroma—3 to 6
Texture—silty clay loam, clay loam, or loam
Content of rock fragments—1 to 10 percent
Reaction—neutral or slightly alkaline

C or 2C horizon:
Hue—7.5YR, 10YR, or 2.5Y
Value—5 or 6
Chroma—3 or 4
Texture—clay loam or loam
Content of rock fragments—1 to 10 percent
Reaction—slightly alkaline or moderately alkaline

618F—Senachwine silt loam, 18 to 35 percent slopes

Setting

Landform: End moraines and ground moraines
Position on the landform: Backslopes

Map Unit Composition

Senachwine and similar soils: 90 percent
Dissimilar soils: 10 percent

Soils of Minor Extent

Similar soils:
- Soils that are more gray in the lower part of the subsoil
- Soils that are deep to carbonates
- Soils that have a surface layer of loam
- Soils that have a dark surface layer
- Soils that have a root-restrictive substratum

Dissimilar soils:
- The somewhat poorly drained Lawson soils in drainageways; in positions below those of the Senachwine soil
- The poorly drained Sawmill soils on flood plains; in positions below those of the Senachwine soil

Properties and Qualities of the Senachwine Soil

Parent material: Till
Drainage class: Well drained
Slowest permeability within a depth of 40 inches: Moderate
Permeability below a depth of 60 inches: Moderately slow
Depth to restrictive feature: More than 80 inches
Available water capacity: About 8.2 inches to a depth of 60 inches
Content of organic matter in the surface layer: 1.0 to 2.5 percent
Shrink-swell potential: Moderate
Ponding: None
Flooding: None
Potential for frost action: Moderate
Hazard of corrosion: Moderate for steel and concrete
Surface runoff class: High
Susceptibility to water erosion: High
Susceptibility to wind erosion: Low

Interpretive Groups

Land capability classification: 6e
Prime farmland category: Not prime farmland
Hydric soil status: Not hydric

618G—Senachwine silt loam, 35 to 60 percent slopes

Setting

Landform: End moraines and ground moraines
Position on the landform: Backslopes

Map Unit Composition

Senachwine and similar soils: 92 percent
Dissimilar soils: 8 percent

Soils of Minor Extent

Similar soils:
- Soils that are more gray in the lower part of the subsoil
- Soils that are deep to carbonates
- Soils that have a surface layer of loam
- Soils that are less sloping
- Soils that have a dark surface layer
- Soils that have a root-restrictive substratum

Dissimilar soils:
- The somewhat poorly drained Lawson soils in drainageways; in positions below those of the Senachwine soil
- The poorly drained Sawmill soils on flood plains; in positions below those of the Senachwine soil

Properties and Qualities of the Senachwine Soil

Parent material: Till
Drainage class: Well drained
Slowest permeability within a depth of 40 inches: Moderately slow
Permeability below a depth of 60 inches: Moderately slow
Depth to restrictive feature: More than 80 inches
Available water capacity: About 8.1 inches to a depth of 60 inches
Content of organic matter in the surface layer: 1.0 to 2.5 percent
Shrink-swell potential: Moderate
Ponding: None
Flooding: None
Potential for frost action: Moderate
Hazard of corrosion: Moderate for steel and concrete
Surface runoff class: High
Susceptibility to water erosion: High
Susceptibility to wind erosion: Low

Interpretive Groups

Land capability classification: 7e
Prime farmland category: Not prime farmland
Hydric soil status: Not hydric

Shiloh Series

Taxonomic classification: Fine, smectitic, mesic Cumulic Vertic Endoaquolls

Typical Pedon

Shiloh silty clay loam, 0 to 2 percent slopes, in a slight depression at an elevation of 619 feet above mean sea level; Effingham County, Illinois; 1,580 feet north and 50 feet east of the southwest corner of sec. 11, T. 8 N., R. 4 E.; USGS Shumway, Illinois, topographic quadrangle; lat. 39 degrees 09 minutes 06.4 seconds N. and long. 88 degrees 43 minutes 43.5 seconds W.; UTM Zone 16S, 0350621E 4335042N; NAD 83:

Ap—0 to 7 inches; very dark gray (10YR 3/1) silty clay loam, gray (10YR 5/1) dry; weak medium granular and angular blocky structure; firm; common very fine and

few fine roots throughout; common very fine tubular pores; slightly acid; abrupt smooth boundary.

A—7 to 19 inches; black (10YR 2/1) silty clay loam, dark gray (10YR 4/1) dry; moderate very fine angular blocky structure; firm; common very fine and few fine roots throughout; common very fine tubular pores; slightly acid; gradual smooth boundary.

BA—19 to 35 inches; black (10YR 2/1) silty clay, dark gray (10YR 4/1) dry; strong fine angular blocky structure; very firm; common very fine and few fine roots throughout; common very fine tubular pores; many distinct black (N 2.5/) pressure faces on faces of peds; slightly acid; gradual smooth boundary.

Bg1—35 to 48 inches; very dark gray (N 3/) silty clay, gray (N 5/) dry; strong fine angular blocky structure; very firm; common very fine roots throughout; common very fine tubular pores; common prominent black (10YR 2/1) pressure faces on faces of peds; few fine prominent light olive brown (2.5Y 5/6) masses of iron accumulation on faces of peds and in the matrix; slightly acid; clear smooth boundary.

Bg2—48 to 60 inches; dark gray (5Y 4/1) silty clay loam; weak and moderate medium subangular blocky structure; very firm; common very fine roots throughout; common very fine tubular pores; common fine prominent light olive brown (2.5Y 5/6) and few fine prominent yellowish brown (10YR 5/8) masses of iron accumulation on faces of peds and in the matrix; common medium prominent black (10YR 2/1) masses of manganese accumulation in the matrix; slightly acid; clear smooth boundary.

Bg3—60 to 68 inches; gray (10YR 6/1) silty clay loam; weak medium subangular blocky structure; firm; common very fine roots throughout; common very fine tubular pores; few faint patchy dark gray (2.5Y 4/1) clay films on faces of peds and common distinct dark gray (2.5Y 4/1) clay films on surfaces lining root channels and pores; few fine and medium prominent yellowish brown (10YR 5/6) masses of iron accumulation on faces of peds and in the matrix; slightly acid; abrupt smooth boundary.

2Ab—68 to 79 inches; very dark gray (2.5Y 3/1) silty clay loam; weak coarse subangular blocky structure; firm; few very fine roots throughout; common very fine tubular pores; common distinct very dark gray (2.5Y 3/1) organo-clay films on surfaces lining root channels and pores; about 2 percent fine subangular rock fragments; slightly acid; clear smooth boundary.

2Btgb—79 to 86 inches; gray (10YR 6/1) clay; moderate medium prismatic structure parting to moderate medium angular blocky; very firm; common very fine tubular pores; common distinct very dark gray (2.5Y 3/1) organo-clay films on faces of peds and many distinct very dark gray (2.5Y 3/1) organo-clay films on surfaces lining root channels and pores; few fine prominent yellowish brown (10YR 5/6) masses of iron accumulation on faces of peds and in the matrix; about 2 percent fine subangular rock fragments; slightly acid.

Range in Characteristics

Thickness of the mollic epipedon: 24 to 48 inches
Thickness of the loess or colluvial sediment: More than 60 inches
Depth to carbonates: More than 39 inches
Depth to the base of the cambic horizon: More than 40 inches

Ap and A horizons:
Hue—10YR, 2.5Y, 5Y, or N
Value—2 or 3
Chroma—0 to 2
Texture—silty clay loam

Content of rock fragments—none
Reaction—slightly acid or neutral

BA and Bg horizons:
Hue—10YR, 2.5Y, 5Y, or N
Value—2 to 6
Chroma—0 to 2
Texture—silty clay or silty clay loam
Content of rock fragments—none
Reaction—slightly acid or neutral

BC or C horizon (where present):
Hue—10YR, 2.5Y, 5Y, or N
Value—3 to 6
Chroma—0 to 2
Texture—silty clay loam, silty clay, or silt loam
Content of rock fragments—none
Reaction—slightly acid to slightly alkaline

2Ab or 2Btgb horizon (not in all pedons):
Hue—10YR, 2.5Y, 5Y, or N
Value—2 to 4 in the 2Ab horizon; 4 to 6 in the 2Btgb horizon
Chroma—0 to 3 in the 2Ab horizon; 0 to 2 in the 2Btgb horizon
Texture—clay loam, clay, silty clay, or silty clay loam
Content of rock fragments—0 to 10 percent
Reaction—slightly acid to slightly alkaline in the 2Ab horizon; slightly acid or neutral in the 2Btgb horizon

138A—Shiloh silty clay loam, 0 to 2 percent slopes

Setting

Landform: Depressions on till plains

Map Unit Composition

Shiloh and similar soils: 90 percent
Dissimilar soils: 10 percent

Soils of Minor Extent

Similar soils:
- Soils that are ponded for long periods of time during the growing season

Dissimilar soils:
- The somewhat poorly drained Ipava soils on slight rises; in positions above those of the Shiloh soil

Properties and Qualities of the Shiloh Soil

Parent material: Loess or silty and clayey sediments over paleo accretionary deposits or till
Drainage class: Very poorly drained
Slowest permeability within a depth of 40 inches: Moderately slow
Permeability below a depth of 60 inches: Slow
Depth to restrictive feature: More than 80 inches
Available water capacity: About 8.6 inches to a depth of 60 inches
Content of organic matter in the surface layer: 3.0 to 5.0 percent
Shrink-swell potential: High

Depth and months of highest apparent seasonal high water table: At the surface, January through June
Duration and most likely period of ponding: Brief, January through May
Flooding: None
Potential for frost action: High
Hazard of corrosion: High for steel and low for concrete
Surface runoff class: Negligible
Susceptibility to water erosion: Low
Susceptibility to wind erosion: Moderate

Interpretive Groups

Land capability classification: 3w
Prime farmland category: Prime farmland where drained
Hydric soil status: Hydric

St. Charles Series

Taxonomic classification: Fine-silty, mixed, superactive, mesic Typic Hapludalfs

Typical Pedon

St. Charles silt loam, 2 to 5 percent slopes, on a slope of 3 percent in a cultivated field at an elevation of 623 feet above mean sea level; Bureau County, Illinois; 80 feet north and 2,170 feet west of the southeast corner of sec. 26, T. 16 N., R. 8 E.; USGS Wyanet, Illinois, topographic quadrangle; lat. 41 degrees 20 minutes 09.1 seconds N. and long. 89 degrees 32 minutes 12.3 seconds W.; UTM Zone 16T, 0287733E 4579146N; NAD 83:

Ap—0 to 8 inches; brown (10YR 4/3) silt loam, pale brown (10YR 6/3) dry; moderate medium granular structure; friable; few fine roots; moderately acid; abrupt smooth boundary.
Bt1—8 to 15 inches; yellowish brown (10YR 5/4) silty clay loam; moderate fine subangular blocky structure; friable; few fine roots; many distinct dark brown (10YR 3/3) organic coatings and dark yellowish brown (10YR 4/4) clay films on faces of peds; moderately acid; clear smooth boundary.
Bt2—15 to 21 inches; yellowish brown (10YR 5/4) silty clay loam; moderate medium subangular blocky structure; friable; few fine roots; many distinct dark yellowish brown (10YR 4/4) clay films on faces of peds; moderately acid; clear smooth boundary.
Bt3—21 to 34 inches; yellowish brown (10YR 5/4) silty clay loam; weak medium prismatic structure parting to moderate medium subangular blocky; friable; few fine roots; many distinct dark yellowish brown (10YR 4/4) clay films on faces of peds; few fine rounded distinct black (10YR 2/1) masses of manganese accumulation; moderately acid; clear smooth boundary.
Bt4—34 to 44 inches; yellowish brown (10YR 5/4) silt loam; moderate medium prismatic structure parting to moderate medium subangular blocky; friable; many distinct dark yellowish brown (10YR 4/4) clay films and many distinct light gray (10YR 7/2) silt coatings on faces of peds; common medium distinct brown (7.5YR 4/4) masses of iron and manganese; moderately acid; clear smooth boundary.
Bt5—44 to 50 inches; yellowish brown (10YR 5/4) silt loam; moderate medium subangular blocky structure; friable; many distinct dark yellowish brown (10YR 4/4) clay films and light gray (10YR 7/2) silt coatings on faces of peds; few fine distinct strong brown (7.5YR 5/6) masses of iron accumulation; moderately acid; clear smooth boundary.

2Bt6—50 to 57 inches; yellowish brown (10YR 5/6), stratified loam, sandy loam, and silt loam; weak medium subangular blocky structure; friable; common distinct dark yellowish brown (10YR 4/4) clay films on faces of peds; moderately acid; clear smooth boundary.

2C—57 to 60 inches; yellowish brown (10YR 5/4), stratified loam and silt loam; massive; friable; moderately acid.

Range in Characteristics

Thickness of the loess: 40 to 60 inches
Depth to carbonates: More than 44 inches
Depth to the base of the argillic horizon: More than 35 inches

Ap or A horizon:
Hue—10YR
Value—3 to 5
Chroma—1 to 3
Texture—silt loam
Content of rock fragments—none
Reaction—strongly acid to slightly alkaline

E horizon (where present):
Hue—10YR
Value—4 to 6
Chroma—2 to 4
Texture—silt loam
Content of rock fragments—none
Reaction—strongly acid to slightly alkaline

BE or Bt horizon:
Hue—10YR or 7.5YR
Value—4 or 5
Chroma—3 to 6
Texture—silty clay loam or silt loam
Content of rock fragments—none
Reaction—very strongly acid to neutral

2Bt horizon or 2BC horizon (where present):
Hue—10YR or 7.5YR
Value—4 to 6
Chroma—3 to 6
Texture—stratified loam, sandy loam, fine sandy loam, sandy clay loam, clay loam, or silt loam
Content of rock fragments—less than 15 percent
Reaction—strongly acid to neutral

2C horizon:
Hue—10YR or 7.5YR
Value—4 to 6
Chroma—3 to 6
Texture—silt loam, loam, sandy loam, gravelly loam, or gravelly sandy loam; commonly stratified
Content of rock fragments—0 to 20 percent
Reaction—moderately acid to moderately alkaline

243B—St. Charles silt loam, 2 to 5 percent slopes

Setting

Landform: Outwash plains and stream terraces
Position on the landform: Summits and shoulders

Map Unit Composition

St. Charles and similar soils: 95 percent
Dissimilar soils: 5 percent

Soils of Minor Extent

Similar soils:
- Soils that are more gray in the lower part of the subsoil
- Soils that have more gravel in the substratum and/or in the underlying material
- Soils that have less sand in the substratum and/or in the underlying material

Dissimilar soils:
- The somewhat poorly drained Kendall soils on toeslopes; in positions below those of the St. Charles soil
- The poorly drained Sawmill soils on flood plains; in positions below those of the St. Charles soil

Properties and Qualities of the St. Charles Soil

Parent material: Loess over stratified loamy outwash
Drainage class: Well drained
Slowest permeability within a depth of 40 inches: Moderate
Permeability below a depth of 60 inches: Moderate or moderately rapid
Depth to restrictive feature: More than 80 inches
Available water capacity: About 11.2 inches to a depth of 60 inches
Content of organic matter in the surface layer: 1.0 to 3.0 percent
Shrink-swell potential: Moderate
Ponding: None
Flooding: None
Potential for frost action: High
Hazard of corrosion: Moderate for steel and high for concrete
Surface runoff class: Low
Susceptibility to water erosion: Moderate
Susceptibility to wind erosion: Low

Interpretive Groups

Land capability classification: 2e
Prime farmland category: Prime farmland
Hydric soil status: Not hydric

7243B—St. Charles silt loam, 2 to 5 percent slopes, rarely flooded

Setting

Landform: Stream terraces and flood-plain steps

Map Unit Composition

St. Charles and similar soils: 95 percent
Dissimilar soils: 5 percent

Soils of Minor Extent

Similar soils:
- Soils that are more gray in the lower part of the subsoil
- Soils that have more gravel in the substratum and/or in the underlying material
- Soils that have less sand in the substratum and/or in the underlying material
- Soils that are not subject to flooding

Dissimilar soils:
- The somewhat poorly drained Lawson and poorly drained Sawmill soils on flood plains; in positions below those of the St. Charles soil

Properties and Qualities of the St. Charles Soil

Parent material: Loess over loamy and sandy outwash
Drainage class: Well drained
Slowest permeability within a depth of 40 inches: Moderate
Permeability below a depth of 60 inches: Moderate or moderately rapid
Depth to restrictive feature: More than 80 inches
Available water capacity: About 11.2 inches to a depth of 60 inches
Content of organic matter in the surface layer: 1.0 to 2.5 percent
Shrink-swell potential: Moderate
Ponding: None
Frequency and most likely period of flooding: Rare, November through June
Potential for frost action: High
Hazard of corrosion: Moderate for steel and high for concrete
Surface runoff class: Low
Susceptibility to water erosion: Moderate
Susceptibility to wind erosion: Low

Interpretive Groups

Land capability classification: 2e
Prime farmland category: Prime farmland
Hydric soil status: Not hydric

Tama Series

Taxonomic classification: Fine-silty, mixed, superactive, mesic Typic Argiudolls

Typical Pedon

Tama silt loam, very deep to sand, 2 to 5 percent slopes, on a slope of 3 percent at an elevation of 600 feet above mean sea level; Logan County, Illinois; 220 feet south and 540 feet east of the northwest corner of sec. 16, T. 19 N., R. 3 W.; USGS Broadwell, Illinois, topographic quadrangle; lat. 40 degrees 06 minutes 23 seconds N. and long. 89 degrees 26 minutes 27.4 seconds W.; UTM Zone 16T, 0291955E 4442422N; NAD 83:

Ap—0 to 7 inches; very dark grayish brown (10YR 3/2) silt loam, grayish brown (10YR 5/2) dry; moderate fine granular structure; friable; many fine roots; neutral; abrupt smooth boundary.

A—7 to 16 inches; very dark grayish brown (10YR 3/2) silt loam, grayish brown (10YR 5/2) dry; moderate fine subangular blocky structure; friable; many fine roots; neutral; clear smooth boundary.

Bt1—16 to 21 inches; dark yellowish brown (10YR 4/4) silty clay loam; moderate medium subangular blocky structure; friable; many fine roots; common distinct very dark gray (10YR 3/1) organic coatings on horizontal faces of peds; few faint brown (10YR 4/3) clay films on faces of peds; slightly acid; clear smooth boundary.

Bt2—21 to 26 inches; yellowish brown (10YR 5/4) silty clay loam; moderate medium subangular blocky structure; friable; common fine roots; common faint brown (10YR 4/3) clay films on faces of peds; slightly acid; clear smooth boundary.
Bt3—26 to 33 inches; yellowish brown (10YR 5/4) silty clay loam; moderate fine subangular blocky structure; friable; few fine roots; few faint brown (10YR 4/3) clay films on faces of peds; slightly acid; clear smooth boundary.
Bt4—33 to 57 inches; yellowish brown (10YR 5/4) silt loam; moderate medium and coarse subangular blocky structure; friable; few faint brown (10YR 4/3) clay films on faces of peds; slightly acid; clear smooth boundary.
BC—57 to 70 inches; yellowish brown (10YR 5/4) silt loam; weak coarse subangular blocky structure; friable; few fine irregular faint pale brown (10YR 6/3) iron depletions lining pores; slightly acid; abrupt smooth boundary.
2C—70 to 80 inches; yellowish brown (10YR 5/6) loamy fine sand; single grain; loose; neutral.

Range in Characteristics

Thickness of the mollic epipedon: 10 to 20 inches
Thickness of the loess: More than 60 inches
Depth to carbonates: More than 48 inches

Ap or A horizon:
Hue—10YR
Value—2 or 3
Chroma—1 or 2
Texture—silt loam
Content of rock fragments—none
Reaction—strongly acid to neutral

BA horizon (where present):
Hue—10YR
Value—3 or 4
Chroma—2 or 3
Texture—silt loam or silty clay loam
Content of rock fragments—none
Reaction—strongly acid to slightly acid

Bt horizon:
Hue—10YR
Value—4 or 5
Chroma—3 or 4
Texture—silty clay loam or silt loam
Content of rock fragments—none
Reaction—strongly acid to slightly acid

BC or C horizon:
Hue—10YR
Value—4 or 5
Chroma—3 to 6
Texture—silt loam
Content of rock fragments—none
Reaction—strongly acid to neutral

2BCt or 2BC horizon (where present):
Hue—10YR or 7.5YR
Value—3 to 5
Chroma—2 to 6
Texture—loam, fine sandy loam, clay loam, or sandy clay loam

Content of rock fragments—0 to 5 percent
Reaction—moderately acid to slightly alkaline

2C horizon:
Hue—7.5YR, 10YR, or 2.5Y
Value—3 to 5
Chroma—2 to 6
Texture—loamy fine sand, fine sand, or loamy sand; stratified in some pedons
Content of rock fragments—0 to 14 percent
Reaction—moderately acid to slightly alkaline

737B—Tama silt loam, very deep to sand, 2 to 5 percent slopes

Setting

Landform: Outwash plains
Position on the landform: Backslopes, summits, shoulders

Map Unit Composition

Tama and similar soils: 90 percent
Dissimilar soils: 10 percent

Soils of Minor Extent

Similar soils:
- Soils that are more gray in the lower part of the subsoil
- Soils that have less sand in the substratum and underlying material
- Soils that have carbonates closer to the surface
- Soils that are eroded

Dissimilar soils:
- The somewhat poorly drained Ipava soils on toeslopes; in positions below those of the Tama soil
- The poorly drained Sable soils in swales

Properties and Qualities of the Tama Soil

Parent material: Very deep loess over sandy outwash
Drainage class: Well drained
Slowest permeability within a depth of 40 inches: Moderate
Permeability below a depth of 60 inches: Moderate to rapid
Depth to restrictive feature: 60 to 80 inches to strongly contrasting textural stratification
Available water capacity: About 12.2 inches to a depth of 60 inches
Content of organic matter in the surface layer: 3.0 to 4.0 percent
Shrink-swell potential: Moderate
Ponding: None
Flooding: None
Potential for frost action: High
Hazard of corrosion: Moderate for steel and concrete
Surface runoff class: Low
Susceptibility to water erosion: Low
Susceptibility to wind erosion: Low

Interpretive Groups

Land capability classification: 2e
Prime farmland category: Prime farmland
Hydric soil status: Not hydric

533—Urban land

- This map unit consists of areas that are covered by pavement or buildings. Because of extensive land smoothing, the areas are generally nearly level or gently sloping. Most of the paved areas are parking lots adjacent to shopping centers, industrial plants, and commercial buildings. The power plant at Clinton Lake is included.

W—Water

- This map unit consists of natural bodies of water, such as lakes, ponds, and rivers.

Wyanet Series

Taxonomic classification: Fine-loamy, mixed, active, mesic Typic Argiudolls
Taxadjunct features: The Wyanet soils in this survey area have a thinner dark surface layer than is defined as the range for the series. This difference, however, does not significantly affect the use or behavior of the soils. These soils are classified as fine-loamy, mixed, active, mesic Mollic Hapludalfs.

Typical Pedon

Wyanet silt loam, 5 to 10 percent slopes, eroded, on a slope of 9 percent at an elevation of 704 feet above mean sea level; Bureau County, Illinois; 276 feet south and 2,146 feet east of the northwest corner of sec. 11, T. 16 N., R. 7 E.; USGS Manlius, Illinois, topographic quadrangle; lat. 41 degrees 23 minutes 36.5 seconds N. and long. 89 degrees 39 minutes 27.8 seconds W.; UTM Zone 16T, 0277806E 4585848N; NAD 83:

Ap—0 to 8 inches; mixed very dark grayish brown (10YR 3/2) and dark yellowish brown (10YR 4/4) silt loam, dark grayish brown (10YR 4/2) dry; moderate medium granular structure; friable; many fine roots; slightly acid; abrupt smooth boundary.
Bt1—8 to 16 inches; dark yellowish brown (10YR 4/4) clay loam; moderate fine subangular blocky structure; friable; common fine roots; many distinct brown (10YR 4/3) clay films and few distinct dark brown (10YR 3/3) organic coatings on faces of peds; 1 percent gravel; slightly acid; clear smooth boundary.
Bt2—16 to 26 inches; brown (7.5YR 4/4) clay loam; moderate medium subangular blocky structure; friable; common fine roots; many distinct brown (7.5YR 4/4) clay films on faces of peds; 1 percent gravel; neutral; clear smooth boundary.
BCt—26 to 34 inches; brown (7.5YR 5/4) loam; weak medium subangular blocky structure; friable; few fine roots; few distinct brown (7.5YR 4/4) clay films on faces of peds; 1 percent gravel; slightly effervescent; slightly alkaline; gradual smooth boundary.
C—34 to 60 inches; brown (7.5YR 5/4) loam; massive; friable; few fine roots; 1 percent gravel; strongly effervescent; moderately alkaline.

Range in Characteristics

Thickness of the dark surface soil: 7 to 9 inches
Thickness of the loess: 0 to 18 inches
Depth to carbonates: 20 to 40 inches
Depth to the base of the argillic horizon: 24 to 40 inches

Ap horizon:
Hue—10YR
Value—2 or 3
Chroma—1 to 3

Texture—silt loam
Content of rock fragments—0 to 6 percent
Reaction—moderately acid to neutral

Bt or 2Bt horizon:
Hue—7.5YR, 10YR, or 2.5Y
Value—4 or 5
Chroma—4 to 6
Texture—silty clay loam, clay loam, or loam
Content of rock fragments—0 to 10 percent
Reaction—moderately acid to neutral

BCt or 2BCt horizon:
Hue—7.5YR, 10YR, or 2.5Y
Value—4 to 7
Chroma—3 or 4
Texture—loam
Content of rock fragments—0 to 10 percent
Reaction—slightly alkaline or moderately alkaline

C or 2C horizon:
Hue—7.5YR, 10YR, or 2.5Y
Value—4 to 7
Chroma—3 or 4
Texture—loam
Content of rock fragments—0 to 10 percent
Reaction—slightly alkaline or moderately alkaline

622C2—Wyanet silt loam, 5 to 10 percent slopes, eroded

Setting

Landform: Ground moraines and end moraines
Position on the landform: Backslopes

Map Unit Composition

Wyanet and similar soils: 93 percent
Dissimilar soils: 7 percent

Soils of Minor Extent

Similar soils:
- Soils that are more gray in the lower part of the subsoil
- Soils that are less eroded
- Soils that contain less sand in the subsoil
- Soils that contain less sand and gravel in the substratum and/or in the underlying material
- Soils that have a surface layer of silty clay loam
- Soils that have a root-restrictive substratum

Dissimilar soils:
- The poorly drained Sable soils in swales

Properties and Qualities of the Wyanet Soil

Parent material: Till
Drainage class: Well drained
Slowest permeability within a depth of 40 inches: Moderately slow
Permeability below a depth of 60 inches: Moderately slow

Depth to restrictive feature: More than 80 inches
Available water capacity: About 7.3 inches to a depth of 60 inches
Content of organic matter in the surface layer: 1.5 to 3.5 percent
Shrink-swell potential: Moderate
Ponding: None
Flooding: None
Accelerated erosion: The surface layer has been thinned by erosion.
Potential for frost action: Moderate
Hazard of corrosion: Moderate for steel and concrete
Surface runoff class: Medium
Susceptibility to water erosion: Moderate
Susceptibility to wind erosion: Low

Interpretive Groups

Land capability classification: 3e
Prime farmland category: Not prime farmland
Hydric soil status: Not hydric

Use and Management of the Soils

This soil survey is an inventory and evaluation of the soils in the survey area. It can be used to adjust land uses to the limitations and potentials of natural resources and the environment. Also, it can help to prevent soil-related failures in land uses.

In preparing a soil survey, soil scientists, conservationists, engineers, and others collect extensive field data about the nature and behavioral characteristics of the soils. They collect data on erosion, droughtiness, flooding, and other factors that affect various soil uses and management. Field experience and collected data on soil properties and performance are used as a basis in predicting soil behavior.

Information in this section can be used to plan the use and management of soils for crops and pasture; as forestland; as sites for buildings, sanitary facilities, highways and other transportation systems, and parks and other recreational facilities; and as wildlife habitat. It can be used to identify the potentials and limitations of each soil for specific land uses and to help prevent construction failures caused by unfavorable soil properties.

Planners and others using soil survey information can evaluate the effect of specific land uses on productivity and on the environment in the survey area. The survey can help planners to maintain or create a land use pattern in harmony with the natural soil.

Contractors can use this survey to locate sources of gravel, sand, reclamation material, roadfill, and topsoil. They can use it to identify areas where bedrock, wetness, or very firm soil layers can cause difficulty in excavation.

Health officials, highway officials, engineers, and others may also find this survey useful. The survey can help them plan the safe disposal of wastes and locate sites for pavements, sidewalks, campgrounds, playgrounds, lawns, and trees and shrubs.

Interpretive Ratings

The interpretive tables in this survey rate the soils in the survey area for various uses or describe specific management concerns. Many of the tables identify the limitations that affect specified uses and indicate the severity of those limitations. The ratings in these tables are both verbal and numerical.

Rating Class Terms

Rating classes are expressed in the tables in terms that indicate the extent to which the soils are limited by all of the soil features that affect a specified use or in terms that indicate the potential of the soils for the use. Terms for limitation classes are *not limited, somewhat limited,* and *very limited*. Terms indicating the potential of the soils are *good, fair,* and *poor*.

Numerical Ratings

Numerical ratings in the tables indicate the relative severity of individual limitations. The ratings are shown as decimal fractions ranging from 0.00 to 1.00. They indicate

gradations between the point at which a soil feature has the greatest negative impact on the use and the point at which the soil feature is not a limitation. The limitations appear in order from the most limiting to the least limiting. Thus, if more than one limitation is identified, the most severe limitation is listed first and the least severe one is listed last.

Crops and Pasture

General management needed for crops and pasture is suggested in this section. The estimated yields of the main crops and pasture plants are listed, the system of land capability classification used by the Natural Resources Conservation Service is explained, and prime farmland is described.

Planners of management systems for individual fields or farms should consider the detailed information given in the description of each soil under the heading “Soil Series and Detailed Soil Map Units.” Specific information can be obtained from the local office of the Natural Resources Conservation Service or the Cooperative Extension Service.

In 2002, approximately 192,809 acres in De Witt County was used as cropland. About 98 percent of the planted acreage was harvested. Data from the Illinois Agricultural Statistics Service for the years 1998-2004 provide the following 7-year averages for De Witt County: corn was grown on about 102,400 acres with an average yield of 161 bushels per acre; soybeans were grown on about 95,100 acres with an average yield of 49 bushels per acre; and forage crops were grown on about 2,443 acres. Some areas were used for wheat, silage, or oats (USDA, National Agricultural Statistics Service, 2006; Illinois Agricultural Statistics Service, 2006).

The soils in De Witt County have excellent potential for continued crop production, particularly if the latest crop production technologies are applied. This soil survey can be used as a guide for applying the latest crop production technologies.

Limitations and Hazards Affecting Cropland and Pastureland

The management concerns affecting the use of the detailed soil map units in the survey area for crops and pasture are shown in table 6.

Cropland

The main concerns affecting the management of cropland in De Witt County are crusting, excess lime, excessive permeability, flooding, high pH, ponding, poor tilth, restricted permeability, root-restrictive layers, water erosion, and wetness. Wind erosion is an additional concern in some areas.

Crusting occurs when flowing water or raindrops break down soil structural units, moving clay downward and leaving a concentration of sand and silt particles on the soil surface. Crusts can reduce the rate of water infiltration, increase the runoff rate, inhibit seedling emergence and proper growth, and reduce oxygen diffusion to seedlings. Generally, if the structure in the surface layer is weak, a crust forms on the surface during periods of intense rainfall. Denny, Keomah, and Russell soils have a low content of organic matter in the surface layer, which typically increases the potential for crusting. Practices that help to minimize surface crusting and improve tilth are those that protect the surface from the impact of raindrops and from flowing water. Incorporating green manure crops, manure, or crop residue into the soil and using a system of conservation tillage can improve tilth and reduce the likelihood of surface crusting.

Excess lime can result in deficiencies in available iron, manganese, copper, and zinc. The uptake and utilization of boron by plants may be hindered. The availability of phosphate may be reduced, and the absorption of phosphorus by plants may be affected. Harpster and Hartsburg soils are examples of soils that have excess lime.

This limitation can be overcome by incorporating green manure crops, manure, or crop residue into the soil; applying a system of conservation tillage; applying a nutrient management system, including additions of trace elements; and using conservation cropping systems. Barley and other plants that are tolerant of excess lime should be selected for planting in areas of these soils.

Excessive permeability can cause deep leaching of nutrients and pesticides. The Elburn, Plano, and Tama soils that have a sandy substratum are examples of soils in the survey area that have excessive permeability. Testing soils for application rates, taking into account contributions from crops from previous years and manure applications, is essential for establishing proper nutrient management. Proper timing and application methods can help to prevent the contamination of ground water.

Flooding is a concern in areas where the soils are occasionally or frequently flooded during the growing season. Flooding occurs in unprotected areas along the major rivers and their tributaries (fig. 10). Dikes or diversions reduce the extent of crop damage caused by floodwater. Flooding is a hazard on more than 12,000 acres in De Witt County. Most of the affected soils are frequently flooded by stream overflow. Flooding typically occurs in winter and spring. Damage to crops, particularly winter small grain crops, occurs in some years.

Aetna, Lawson, Radford, Ross, and Sawmill soils are subject to frequent or occasional flooding. Crop varieties that require a relatively short growing season should be selected for planting in areas of these soils. Planting crops that are adapted to a shorter growing season and wetter conditions reduces the risk of crop damage caused by floodwater. Reducing runoff from higher ground within the watershed can help to minimize the frequency and severity of flooding. Changing land use from cropland to pasture or forestland can also minimize economic damage.

High pH can result in plant toxicity or reduce the availability of plant nutrients, either of which can affect the health and vigor of the plants. Harpster, Hartsburg, and Wyanet soils are examples of soils that have a high pH in the upper 40 inches. This limitation

Figure 10.—Flooding in an area of Ross soils. Flooding can delay planting and damage crops and roads.

can be overcome by incorporating green manure crops, manure, or crop residue into the soil; applying a system of conservation tillage; applying a nutrient management system, including additions of trace elements; and using conservation cropping systems. Crops that are tolerant of a high pH, such as oats and barley, should be selected for planting in areas of these soils.

Ponding inhibits aeration and increases nutrient losses. Soils that are subject to ponding in this survey area include Denny, Sable, and Shiloh soils. Land grading helps to control ponding. Surface ditches and surface inlet tile also help to remove excess water if suitable outlets are available. Management of drainage in conformance with regulations affecting wetlands may require special permits and extra planning.

Poor tilth can be inherent or can be caused by excessive tillage. Soils with poor tilth generally have a surface layer that is sticky when wet and hard and cloddy when dry. Because such soils can be tilled only within a narrow range in moisture content, seedbed preparation is difficult. If the timing is not right, the resultant clods can hinder good seed-to-soil contact. Poor tilth inhibits seedling germination and emergence, increases runoff and erosion, and reduces the rate of water infiltration. Soils with good tilth are granular and porous and have a high content of organic matter in the surface layer. Soils that have poor tilth generally have more clay, a lower content of organic matter, and weaker soil structure in the surface layer. The severely eroded Russell soils and the very poorly drained Shiloh and Peotone soils have poor tilth. If these soils are plowed when too wet, they can become cloddy. Practices that improve soil tilth are those that protect the surface from the impact of raindrops and from flowing water. Incorporating green manure crops, manure, or crop residue into the soil and using a system of conservation tillage can improve tilth. Surface cloddiness can be controlled by avoiding tillage when the soil is too wet or by using no-till farming methods.

Restricted permeability interferes with internal soil drainage and aeration. Waterlogging, denitrification, compaction, delayed planting, and an increased rate of surface runoff are some of the effects of restricted permeability on cropland. The poorly drained Denny soils have restricted permeability; drainage is required for optimum crop yields in areas of these soils. A system of surface ditches that is composed of mains and laterals is the most common drainage method used in areas of such soils. Tile drainage is less effective than surface drainage in these areas unless the tiles are closely spaced. Conservation tillage or no-till farming and crop residue management can help to minimize compaction and reduce the rate of surface runoff.

Root-restrictive layers include dense material, natric horizons, bedrock, or fragipans. These layers can increase the susceptibility to erosion and affect plant growth by limiting nutrients and available water. In Russell soils, for example, the penetration of plant roots is restricted by a layer of dense material. A combination of conservation measures, including special tillage practices, incorporation of organic material, and proper crop selection, can help to overcome this limitation.

Water erosion can affect the stability of soil aggregates and thereby reduce the rate of water infiltration and increase the surface runoff rate (Brady, 1984). Soils with long or steep slopes are susceptible to water erosion. Sheet and rill erosion is a hazard in areas where slopes are long or where the soils are subject to concentrated flow. Excessive runoff can reduce the quality of surface water through sedimentation and contamination by agricultural chemicals attached to soil particles in the sediment. Sediment enters streams, rivers, water impoundments, and road ditches. Many of the soils in De Witt County are subject to water erosion, including Birkbeck, Catlin, Osco, and Miami soils. Erosion can be controlled by a conservation tillage system that leaves crop residue on the surface after planting or by a cropping system that includes grasses and legumes in rotation in the cropping sequence. On soils with long, uniform slopes, contour farming and/or terraces in combination with a conservation tillage system can help to control erosion. Sedimentation problems should be addressed if

proper drainage is to be maintained. The removal of sediments is expensive. Management measures that reduce the hazard of water erosion help to minimize sedimentation and improve the quality of water available for rural, municipal, and recreational uses and for fish and wildlife.

Wetness is a management concern on about 72 percent of the acreage in De Witt County. Some soils are naturally so wet that the production of crops generally is not possible unless a drainage system is installed. The poorly drained Denny, Edgington, and Sable soils are examples of soils that are subject to wetness. Seasonal wetness in areas of somewhat poorly drained soils, such as Elburn and Ipava soils, can delay planting in some years. Most of the soils needing drainage are already drained by surface ditches or tile. Maintenance or replacement of drainage systems is necessary for maximum efficiency. Subsurface drains can lower the seasonal high water table if suitable outlets are available. In soils that have a high clay content and restricted permeability, subsurface drainage is not practical. In these soils, surface ditches are used to reduce the wetness. Management of drainage in conformance with regulations influencing wetlands may require special permits and extra planning.

Wind erosion can be a concern in areas of soils that have a surface layer of sand or loamy sand. Generally, areas where the surface is exposed as a result of cultivation are subject to wind erosion. The hazard of wind erosion is also affected by soil moisture content, content of organic matter, content of calcium carbonate, content of rock fragments, aggregate stability, and cultivation practices. Large areas that are not protected by field windbreaks and cleared areas on flood plains are vulnerable. Although most of the soils in De Witt County are not susceptible to severe wind erosion as a result of the texture of the surface layer, some soils, such as Harpster, Peotone, and Shiloh soils, are moderately susceptible to wind erosion. Conservation tillage, crop residue management, management of soil moisture, conservation structures, and windbreaks can be used to limit the damage caused by wind erosion.

Pastureland

Growing legumes, cool-season grasses, and warm-season grasses that are suited to the soils and climate of the area helps to maintain a productive stand of pasture. Suitable pasture and hay plants include several legumes, cool-season grasses, and native warm-season grasses. Alfalfa, red clover, alsike clover, and ladino clover are legumes commonly grown in the county. Alfalfa is best suited to well drained soils, such as Osco, Plano, Russell, and Senachwine soils, and moderately well drained soils, such as Birkbeck, Buckhart, Catlin, and Dana soils. Alfalfa is also suited to some of the somewhat poorly drained soils, such as Elburn, Ipava, and Lawson soils. Other legumes, such as alsike clover, red clover, and ladino clover, are more tolerant of wetter conditions. These legumes are best suited to poorly drained soils, such as Hartsburg, Sable, and Sawmill soils, and to some of the somewhat poorly drained soils, such as Aetna, Kendall, and Keomah soils.

Cool-season grasses commonly grown in the county include smooth bromegrass, orchardgrass, and tall fescue. These grasses can be used alone or in mixtures with legumes. Native warm-season grasses, such as indiangrass, big bluestem, and switchgrass, grow very well in the summer. They require different management techniques from those used for cool-season grasses.

Proper grazing is essential for the production of high-quality forage, stand survival, and erosion control. It helps plants maintain sufficient and generally vigorous top growth during the growing season. Brush control is essential in many areas, and weed control is generally needed. Using rotation grazing, deferring grazing when the soil is wet, and applying lime and fertilizers as needed also are important management practices.

The main concerns affecting the management of pastureland in De Witt County are equipment limitations, excess lime, excessive permeability, flooding, frost heave, high pH, low pH, ponding, poor tilth, root-restrictive layers, water erosion, and wetness.

Equipment limitations make fertilization, harvest, pasture renovation, and seedbed preparation difficult or costly. The use of equipment is limited in moderately steep or steep areas of Hennepin, Miami, and Senachwine soils.

Excess lime can result in deficiencies in available iron, manganese, copper, and zinc. The uptake and utilization of boron by plants may be hindered. The availability of phosphate may be reduced, and the absorption of phosphorus by plants may be affected. Harpster and Hartsburg soils are examples of soils that have excess lime. Establishing proper nutrient management, including additions of trace elements, and applying manure can help to overcome this limitation. Big bluestem, smooth brome, red fescue, tall fescue, timothy, and other plants that are tolerant of excess lime should be selected for planting in areas of these soils.

Excessive permeability can cause deep leaching of nutrients and pesticides. The Elburn, Plano, and Tama soils that have a sandy substratum are examples of soils that have excessive permeability. Testing soils for application rates is essential for establishing proper nutrient management. The contamination of ground water can be prevented by applying nutrients at the proper time and using the proper application methods.

Flooding occurs in unprotected areas along the major rivers and their tributaries. Surface drainage ditches help to remove floodwater where suitable outlets are available. Flooding may damage pasture plants in some years. Aetna, Lawson, Radford, Ross, and Sawmill soils are subject to flooding. Selecting forage and hay varieties that are adapted to a shorter growing season and wetter conditions also reduces the extent of flood damage. Dikes and diversions can help to minimize the extent of damage caused by frequent or occasional flooding. Restricted use during wet periods helps to keep the pasture in good condition. Management of drainage in conformance with regulations pertaining to wetlands may require special permits and extra planning.

Frost heave occurs in soils when ice lenses or bands develop into or push an ice wedge between layers of soil near the surface. The ice wedges heave the overlying soil layer upward, snapping the roots. Soils that have textures low in sand have small pores that hold water and enable ice lenses to form. Denny, Edgington, Harpster, Shiloh, Hartsburg, Peotone, and Sawmill soils are susceptible to frost heave. Selecting adapted forage and hay varieties reduces the effects of frost heave. Timely rotation of grazing maintains a vegetative cover on the surface, which insulates the soil and thus reduces the effects of frost heave. In winter, leaving stubble 4 to 6 inches high helps to prevent frost heave. Using grass-legume mixtures can also help to prevent frost heave.

High pH can result in plant toxicity or reduce the availability of plant nutrients, either of which can affect the health and vigor of the plants. Harpster, Hartsburg, and Wyanet soils are examples of soils that have a high pH in the upper 40 inches. This limitation can be overcome by incorporating green manure crops, manure, or crop residue into the soil; applying a system of conservation tillage; applying a nutrient management system, including additions of trace elements; and using conservation cropping systems. Selecting crops that are tolerant of a high pH, such as oats and barley, can also help to overcome this limitation.

Low pH also can result in plant toxicity or reduce the availability of nutrients, either of which can affect the health and vigor of the plants. Many soils in De Witt County have a pH of 5.5 or less within a depth of 40 inches. Birkbeck, Keomah, and Russell soils are examples. Selecting adapted forage and hay varieties and applying lime according to the results of soil tests help to overcome low pH. Such species as red clover, alsike clover, redtop, big bluestem, smooth brome, orchardgrass, red fescue,

tall fescue, timothy, switchgrass, Kentucky bluegrass, and crimson clover are more tolerant of acidic conditions than other species. Selecting these plants can improve the quantity and quality of livestock forage.

Ponding affects aeration and increases nutrient losses. Denny, Sable, and Shiloh soils are examples of soils in the survey area that are subject to ponding. Land grading helps to control ponding. Surface ditches and surface inlet tile also help to remove excess water if suitable outlets are available. Management of drainage in conformance with regulations affecting wetlands may require special permits and extra planning. Selecting forage and hay varieties adapted to wet conditions can improve forage production. Restricted use during wet periods helps to keep the pasture in good condition.

Poor tilth in areas used as pasture or hayland can be inherent or can be caused by erosion or excessive tillage. Soils with poor tilth generally have a surface layer that is sticky when wet and hard and cloddy when dry. Because such soils can be tilled only within a narrow range in moisture content, seedbed preparation is difficult. If the timing is not right, the resultant clods can hinder good seed-to-soil contact. Poor tilth inhibits seedling germination and emergence, increases runoff and erosion, and reduces the rate of water infiltration. Soils that have good tilth are granular and porous and have a high content of organic matter in the surface layer. Soils that have poor tilth generally have more clay, a lower content of organic matter, and weaker soil structure in the surface layer. The severely eroded Russell soils are characterized by poor tilth. If these soils are tilled when too wet, they can become cloddy. Practices that improve soil tilth are those that protect the surface from the impact of raindrops and from flowing water. Surface cloddiness can be controlled by avoiding tillage when the soil is too wet, using no-till planting methods, and using a planned grazing system in areas of pastureland.

Root-restrictive layers include dense material, natric horizons, bedrock, or fragipans. Such layers can increase the hazard of erosion and can affect plant growth by limiting nutrients and available water. In Russell soils, for example, the penetration of plant roots is restricted by a layer of dense material. A combination of conservation measures, including using special tillage practices, incorporating organic material into the soil, and selecting adapted forage and hay varieties, can help to overcome this limitation.

Water erosion reduces the productivity of the soil. It also results in sediments, livestock manure, and added nutrients entering streams, rivers, water impoundments, and road ditches. Soils with long or steep slopes are also susceptible to water erosion. Many of the soils in De Witt County are subject to water erosion, including Birkbeck, Catlin, Osco, and Miami soils. Using a system of rotation grazing prevents overgrazing and thus prevents surface compaction and excessive runoff and helps to control erosion. Tilling on the contour, using a no-till system of seeding, and selecting adapted forage and hay varieties also help to control erosion.

Wetness is a management concern on about 72 percent of the acreage in De Witt County. Some soils are naturally so wet that the production of crops generally is not possible unless a drainage system is installed. Wetness is a concern in areas of the poorly drained Denny, Edgington, and Sable soils. Most of the soils needing drainage are already drained by surface ditches or tile. Maintaining or replacing drainage systems is necessary for maximum efficiency. Subsurface drains can lower the seasonal high water table if suitable outlets are available. In soils that have a high clay content and restricted permeability, subsurface drainage is not practical. In these soils, surface ditches are used to reduce the wetness. Management of drainage in conformance with regulations influencing wetlands may require special permits and extra planning. In undrained areas, grasses and forbs, such as switchgrass, alsike clover, and redtop, should grow well.

Erosion Control

Generally, a combination of several practices is needed to control erosion in areas used for crops and pasture. Conservation tillage, including chisel tillage and no-till practices, is common in De Witt County. Contour stripcropping, contour farming, conservation cropping systems, crop residue management, terraces, diversions, buffer strips, riparian areas, and grassed waterways help to prevent excessive soil loss.

The loss of the surface layer through erosion causes damage in two ways. First, productivity is reduced as the surface layer is lost and part of the subsoil is incorporated into the plow layer. The subsoil generally has fewer plant nutrients, a lower content of organic matter, and a higher content of clay than the surface layer. As the content of organic matter in the tilled layer decreases and the clay content increases, soil tilth is reduced. Loss of soil tilth increases the likelihood that a crust will form on the surface; the crust can reduce the rate of water infiltration. The higher clay content increases the likelihood that the surface layer will become cloddy when tilled, especially if it is tilled when wet. As a result, preparing a seedbed becomes very difficult. Water tends to puddle on soils in eroded areas, and the crust that forms when the puddles dry up can increase the rate of surface runoff. Loss of the surface layer is especially damaging on soils that have a clayey subsoil, on soils that tend to be droughty, and on soils that are moderately eroded. Second, erosion on farmland results in the sedimentation and pollution of streams. Controlling erosion minimizes this pollution and improves the quality of water for municipal and recreational uses and for fish and other wildlife.

Erosion-control measures provide protective plant cover, increase the rate of water infiltration, and reduce the runoff rate. A cropping system that keeps plants on the surface for extended periods reduces the hazard of erosion and preserves the productive capacity of the soils. Including forage crops, such as grasses and legumes, in the cropping sequence helps to control erosion in the more sloping areas. It also provides nitrogen and improves tilth for the next crop.

Terraces reduce the hazard of erosion by shortening the slopes and by controlling runoff (fig. 11). If a tile outlet terrace is used, the water that collects behind the terrace is removed by tile at a slow, controlled rate.

Grassed waterways reduce the hazard of erosion by providing a stable channel for water runoff on sloping land (fig. 12).

Conservation buffer strips and riparian areas can help to maintain stream channels and inhibit runoff (fig. 13). A stream channel without trees is likely to slump, but a protected riparian area can help to maintain the stream channel.

Contour farming involves conducting tillage or other fieldwork along the contour of a slope rather than perpendicular to the slope. This practice helps to control erosion because it results in the formation of small ridges perpendicular to the slope of the land. The ridges greatly reduce the velocity of the water moving downhill.

Stripcropping is an effective erosion-control measure if used in combination with other methods. It involves alternating rows or strips of one crop with rows of another crop having a different rate of maturity and a different canopy cover. The rows are planted on the contour. The resulting vegetative cover reduces the hazard of erosion by protecting the surface from the impact of raindrops.

Erosion-control management through tillage and cropping systems is effective alone or in combination with other measures on most of the farmland in the county. The combination used and its effectiveness depends on soil characteristics and topography. Information about the design of erosion-control practices for each kind of soil is provided in the Technical Guide, which is available in the local office of the Natural Resources Conservation Service.

Figure 11.—Terraces in an area of Russell and Miami soils reduce the hazard of erosion by slowing the rate of surface runoff.

Conservation Tillage

Most of the cropland in De Witt County can be protected from erosion by using a conservation tillage system. Conservation tillage includes any noninversion tillage practice that keeps a protective amount of residue on the surface throughout the year. The crop residue increases the rate of water infiltration by improving tilth. It also protects the surface from the beating action of raindrops, prevents surface crusting, and provides a more friable seedbed for good germination.

Chisel tillage is a common system of conservation tillage used in De Witt County. This system leaves crop residue on 20 to 60 percent of the surface (fig. 14). The extent of the coverage depends on the type of chisel plow used, the speed with which the equipment moves through the field, and the kind of crop planted. Chisel tillage often follows stalk chopping in the fall or is done immediately prior to planting in the spring.

In no-till systems, a grain crop is planted directly in a cover crop, sod, or the crop residue of the previous year (fig. 15). A special planter that disturbs only the row area is used. Herbicides are used to control competing vegetation. The nearly complete ground cover protects the soil from the impact of raindrops and helps to control erosion caused by runoff.

Drainage Systems

Drainage systems consist of subsurface tile drains, surface inlets, open drainage ditches, or a combination of these (fig. 16). They have been installed in most areas of poorly drained and somewhat poorly drained soils in the county. As a result, these soils are adequately drained for the crops commonly grown in the area. Some areas of poorly drained soils require surface tile inlets or shallow surface ditches to remove

Figure 12.—A grassed waterway in an area of Birkbeck soils provides a stable channel for runoff.

ponded water. Some areas of somewhat poorly drained soils are wet long enough that productivity may be reduced unless they are artificially drained. Management of drainage in conformity with regulations affecting wetlands may require special permits and extra planning.

The design of surface and subsurface drainage systems varies with the kind of soil and the availability of drainage outlets (fig. 17). Some areas of poorly drained soils in depressions require a combination of surface drains and tile drains. The tile should be more closely spaced in the more slowly permeable soils than in the more rapidly permeable soils. Manipulating drainage can allow the producer to conserve moisture, manage weeds and insects, and limit the leaching of nutrients and chemicals.

Further information about drainage systems is provided in the Technical Guide, which is available in local offices of the Natural Resources Conservation Service.

Yields per Acre

The average yields per acre that can be expected of the principal crops under a high level of management are shown in table 7. In any given year, yields may be higher or lower than those indicated in the table because of variations in rainfall and other climatic factors. The land capability classification of map units in the survey area also is shown in the table.

The yields are based mainly on the experience and records of farmers, conservationists, and extension agents. Available yield data from nearby counties and results of field trials and demonstrations also are considered (Olson and Lang, 2000; Olson and others, 2000).

The management needed to obtain the indicated yields of the various crops depends on the kind of soil and the crop. Management can include drainage, erosion control, and protection from flooding; the proper planting and seeding rates; suitable high-yielding crop varieties; appropriate and timely tillage; control of weeds, plant diseases, and harmful insects; favorable soil reaction and optimum levels of nitrogen,

phosphorus, potassium, and trace elements for each crop; effective use of crop residue, barnyard manure, and green manure crops; and harvesting that ensures the smallest possible loss.

Yields for grass-legume pasture also are shown in table 7. Pasture yields are expressed in terms of animal unit months. An animal unit month (AUM) is the amount of forage required by one mature cow of approximately 1,000 pounds weight, with or without a calf, for 1 month.

The estimated yields in the table reflect the productive capacity of each soil for each of the principal crops and pasture plants. Yields are likely to increase as new production technology is developed. The productivity of a given soil compared with that of other soils, however, is not likely to change.

Crops other than those shown in table 7 are grown in the survey area, but estimated yields are not listed because the acreage of such crops is small. The local office of the Natural Resources Conservation Service or the Cooperative Extension Service can provide information about the management and productivity of the soils for those crops.

Land Capability Classification

Land capability classification shows, in a general way, the suitability of soils for most kinds of field crops. Crops that require special management are excluded. The soils are grouped according to their limitations for field crops, the risk of damage if they are used for crops, and the way they respond to management. The criteria used in grouping the soils do not include major and generally expensive landforming that would change slope, depth, or other characteristics of the soils, nor do they include

Figure 13.—Conservation buffer strips in an area of Elburn soils slow water runoff; increase the rate of water infiltration; inhibit the movement of sediment, nutrients, and pesticides into nearby streams; and provide a source of food and shelter for many wildlife species.

Figure 14.—The corn residue in this area of Birkbeck soils improves tilth and the nutrient-holding capacity of the soil.

possible but unlikely major reclamation projects. Capability classification is not a substitute for interpretations designed to show suitability and limitations of groups of soils for forestland or for engineering purposes.

In the capability system, soils are generally grouped at three levels—capability class, subclass, and unit (USDA, 1961).

Capability classes, the broadest groups, are designated by the numbers 1 through 8. The numbers indicate progressively greater limitations and narrower choices for practical use. The classes are defined as follows:

Class 1 soils have slight limitations that restrict their use.

Class 2 soils have moderate limitations that restrict the choice of plants or that require moderate conservation practices.

Class 3 soils have severe limitations that restrict the choice of plants or that require special conservation practices, or both.

Class 4 soils have very severe limitations that restrict the choice of plants or that require very careful management, or both.

Class 5 soils are subject to little or no erosion but have other limitations, impractical to remove, that restrict their use mainly to pasture, rangeland, forestland, or wildlife habitat.

Class 6 soils have severe limitations that make them generally unsuitable for cultivation and that restrict their use mainly to pasture, rangeland, forestland, or wildlife habitat.

Class 7 soils have very severe limitations that make them unsuitable for cultivation and that restrict their use mainly to grazing, forestland, or wildlife habitat.

Class 8 soils and miscellaneous areas have limitations that preclude commercial plant production and that restrict their use to recreational purposes, wildlife habitat, watershed, or esthetic purposes.

Capability subclasses are soil groups within one class. They are designated by adding a small letter, *e, w, s,* or *c,* to the class numeral, for example, 2e. The letter *e* shows that the main hazard is the risk of erosion unless close-growing plant cover is maintained; *w* shows that water in or on the soil interferes with plant growth or cultivation (in some soils the wetness can be partly corrected by artificial drainage); *s* shows that the soil is limited mainly because it is shallow, droughty, or stony; and *c,* used in only some parts of the United States, shows that the chief limitation is climate that is very cold or very dry.

In class 1 there are no subclasses because the soils of this class have few limitations. Class 5 contains only the subclasses indicated by *w, s,* or *c* because the soils in class 5 are subject to little or no erosion. They have other limitations that restrict their use to pasture, rangeland, forestland, or wildlife habitat.

Capability units are soil groups within a subclass. The soils in a capability unit are enough alike to be suited to the same crops and pasture plants, to require similar management, and to have similar productivity. Capability units are generally designated by adding an Arabic numeral to the subclass symbol, for example, 2e-4 and 3e-6. These units are not given in all soil surveys.

The capability classification of the soils in this survey area is given in the section "Soil Series and Detailed Soil Map Units" and in the yields table.

Prime Farmland

Prime farmland is one of several kinds of important farmland defined by the U.S. Department of Agriculture. It is of major importance in meeting the Nation's short- and long-range needs for food and fiber. Because the supply of high-quality farmland is limited, the U.S. Department of Agriculture recognizes that responsible levels of

Figure 15.—No-till soybeans in an area of Birkbeck and Russell soils. No-till farming provides protection from the impact of raindrops.

Figure 16.—A grass-bordered drainage ditch in an area of Sable soils provides nesting cover.

government, as well as individuals, should encourage and facilitate the wise use of our Nation’s prime farmland.

Prime farmland, as defined by the U.S. Department of Agriculture, is land that has the best combination of physical and chemical characteristics for producing food, feed, forage, fiber, and oilseed crops and is available for these uses. It could be cultivated land, pastureland, forestland, or other land, but it is not urban or built-up land or water areas. The soil qualities, growing season, and moisture supply are those needed for the soil to economically produce sustained high yields of crops when proper management, including water management, and acceptable farming methods are applied. In general, prime farmland has an adequate and dependable supply of moisture from precipitation or irrigation, a favorable temperature and growing season, acceptable acidity or alkalinity, an acceptable salt and sodium content, and few or no rocks. It is permeable to water and air. It is not excessively erodible or saturated with water for long periods, and it either is not frequently flooded during the growing season or is protected from flooding. Slope ranges mainly from 0 to 6 percent. More detailed information about the criteria for prime farmland is available at the local office of the Natural Resources Conservation Service.

About 227,350 acres in the survey area, or nearly 88 percent of the total acreage, meets the requirements for prime farmland. This land generally is used for cultivated crops, mainly corn and soybeans. Areas of prime farmland are throughout the county.

A recent trend in land use in some parts of Illinois has been the loss of some prime farmland to industrial and urban uses. The loss of prime farmland to other uses puts pressure on marginal lands, which generally are more erodible, droughty, and less productive and cannot be easily cultivated.

The map units in the survey area that are considered prime farmland are listed in table 8. This list does not constitute a recommendation for a particular land use. On some soils included in the list, measures that overcome a hazard or limitation, such as flooding, wetness, and droughtiness, are needed. Onsite evaluation is needed to

determine whether or not the hazard or limitation has been overcome by corrective measures. The extent of each listed map unit is shown in table 5. The location is shown on the detailed soil maps. Some of the soil qualities that affect use and management are described under the heading “Soil Series and Detailed Soil Map Units.”

Hydric Soils

In this section, hydric soils are defined and described and the hydric soils in the survey area are listed.

The three essential characteristics of wetlands are hydrophytic vegetation, hydric soils, and wetland hydrology (Cowardin and others, 1979; U.S. Army Corps of Engineers, 1987; National Research Council, 1995; Tiner, 1985). Criteria for all of the characteristics must be met for areas to be identified as wetlands. Undrained hydric soils that have natural vegetation should support a dominant population of ecological wetland plant species. Hydric soils that have been converted to other uses should be capable of being restored to wetlands.

Hydric soils are defined by the National Technical Committee for Hydric Soils (NTCHS) as soils that formed under conditions of saturation, flooding, or ponding long enough during the growing season to develop anaerobic conditions in the upper part (Federal Register, 1994). These soils, under natural conditions, are either saturated or inundated long enough during the growing season to support the growth and reproduction of hydrophytic vegetation.

The NTCHS definition identifies general soil properties that are associated with wetness. In order to determine whether a specific soil is a hydric soil or nonhydric soil, however, more specific information, such as information about the depth and duration

Figure 17.—A large main tile in an area of Sable soils outlets into one of the county’s many drainage ditches.

of the water table, is needed. Thus, criteria that identify those estimated soil properties unique to hydric soils have been established (Federal Register, 2002). These criteria are used to identify map unit components that normally are associated with wetlands. The criteria used are selected estimated soil properties that are described in "Soil Taxonomy" (Soil Survey Staff, 1999) and "Keys to Soil Taxonomy" (Soil Survey Staff, 2006) and in the "Soil Survey Manual" (Soil Survey Division Staff, 1993).

If soils are wet enough for a long enough period of time to be considered hydric, they should exhibit certain properties that can be easily observed in the field. These visible properties are indicators of hydric soils. The indicators used to make onsite determinations of hydric soils are specified in "Field Indicators of Hydric Soils in the United States" (Hurt and Vasilas, 2006).

Hydric soils are identified by examining and describing the soil to a depth of about 20 inches. This depth may be greater if determination of an appropriate indicator so requires. It is always recommended that soils be excavated and described to the depth necessary for an understanding of the redoximorphic processes. Then, using the completed soil descriptions, soil scientists can compare the soil features required by each indicator and specify which indicators have been matched with the conditions observed in the soil. The soil can be identified as a hydric soil if at least one of the approved indicators is present.

Map units that are dominantly made up of hydric soils may have small areas, or inclusions, of nonhydric soils in the higher positions on the landform, and map units dominantly made up of nonhydric soils may have inclusions of hydric soils in the lower positions on the landform. Table 9 lists the map units that include hydric soils, either as major components or as soils of minor extent. The hydric soils listed in the table meet the definition of a hydric soil and have at least one of the hydric soil indicators. This list can help in planning land uses; however, onsite investigation is recommended to determine the hydric soils on a specific site (National Research Council, 1995; Hurt and Vasilas, 2006).

The criteria for hydric soils are represented by codes in the table (for example, 2B3). Definitions for the codes are as follows:

1. All Histels except for Folistels, and Histosols except for Folists.
2. Soils in Aquic suborders, great groups, or subgroups, Albolls suborder, Historthels great group, Histoturbels great group, Pachic subgroups, or Cumulic subgroups that:
   A. are somewhat poorly drained and have a water table at the surface (0.0 feet) during the growing season, or
   B. are poorly drained or very poorly drained and have either:
      1) a water table at the surface (0.0 feet) during the growing season if textures are coarse sand, sand, or fine sand in all layers within a depth of 20 inches, or
      2) a water table at a depth of 0.5 foot or less during the growing season if saturated hydraulic conductivity (Ksat) is equal to or greater than 6.0 in/hr in all layers within a depth of 20 inches, or
      3) a water table at a depth of 1.0 foot or less during the growing season if saturated hydraulic conductivity (Ksat) is less than 6.0 in/hr in any layer within a depth of 20 inches.
3. Soils that are frequently ponded for long or very long duration during the growing season.
4. Soils that are frequently flooded for long or very long duration during the growing season.

Windbreaks and Environmental Plantings

Windbreaks protect livestock, buildings, yards, fruit trees, gardens, and cropland from wind and snow and help to keep snow on fields. They also provide food and cover for wildlife.

Wind erosion is a moderate hazard on about 1 percent of the soils in the county. These soils have a high amount of finely divided calcium carbonate (Harpster soils, for example) or have a high content of clay in the surface layer (Peotone and Shiloh soils, for example). Field windbreaks can reduce the hazard of wind erosion. They are narrow plantings made at right angles to the prevailing wind and at specific intervals across the field. The interval depends on the erodibility of the soil.

Environmental plantings help to beautify and screen houses and other buildings and to abate noise. The plants, mostly evergreen shrubs and trees, are closely spaced. To ensure plant survival, a healthy planting stock of suitable species should be planted properly on a well prepared site and maintained in good condition.

Table 10 shows the height that locally grown trees and shrubs are expected to reach in 20 years on soils in the survey area. The estimates in the table are based on measurements and observation of established plantings that have been given adequate care. They can be used as a guide in planning windbreaks and screens. Additional information on planning windbreaks and screens and planting and caring for trees and shrubs can be obtained from the local office of the Natural Resources Conservation Service or the Cooperative Extension Service or from a commercial nursery.

Forestland

When the first settlers arrived, forests covered about 19 percent of the land in De Witt County (Iverson and others, 1989). Since then, about 83 percent of the trees have been cleared from the areas that are most suitable for cultivation.

By 2000, only about 8,600 acres, or about 3 percent of the acreage in De Witt County, remained as forestland (Illinois Department of Agriculture, 2006). Most of the forestland acres are privately owned. The most common trees in the uplands are white oak, black oak, northern red oak, shagbark hickory, white ash, green ash, sugar maple, silver maple, boxelder, black walnut, black cherry, and American elm. The most common trees on flood plains are cottonwood, sycamore, willow, bur oak, pin oak, swamp white oak, hackberry, and silver maple.

The remaining forestland acreage is predominantly in areas that are too steep, too wet, or too isolated for cultivation. Most of these areas are along the drainageways of Kickapoo Creek, North Fork, and Salt Creek and their tributaries. If properly managed, the soils in these remaining forestland areas are generally well suited to producing high-quality trees.

The productivity of many of the remaining forestland stands could be improved with proper management. Excluding livestock from the forestland, providing protection from fire, insects, and diseases, using proper logging methods, and applying proven silvicultural methods to enhance growth and regeneration are management practices that are commonly needed in these areas.

In table 11, the *potential productivity* of merchantable or *common trees* on a soil is expressed as a site index and as a volume number. The *site index* is the average height, in feet, that dominant and codominant trees of a given species attain in a specified number of years. The site index applies to fully stocked, even-aged, unmanaged stands. Commonly grown trees are those that forest managers generally favor in intermediate or improvement cuttings. They are selected on the basis of

growth rate, quality, value, and marketability. More detailed information regarding site index is available in the “National Forestry Manual,” which is available in local offices of the Natural Resources Conservation Service or on the Internet (http://soils.usda.gov/technical).

The *volume of wood fiber*, a number, is the yield likely to be produced by the most important tree species. This number, expressed as cubic feet per acre per year and calculated at the age of culmination of the mean annual increment (CMAI), indicates the amount of fiber produced in a fully stocked, even-aged, unmanaged stand.

Suggested trees to plant are those that are preferred for planting, seeding, or natural regeneration and those that remain in the stand after thinning or partial harvest.

Recreation

The demand for recreational facilities is increasing throughout De Witt County (fig. 18). The Clinton Lake State Recreation Area is 3 miles east of Clinton, Illinois. This area consists of 9,300 total acres, 2,900 acres of which are available for hunting. Other small areas throughout the county offer playgrounds, athletic fields, golf courses, fishing ponds, camping and picnic areas, and hunting areas.

The potential for further recreational development is favorable throughout the county. The soils having the best potential for such development are in the uplands along the banks and tributaries of Kickapoo Creek, North Fork, and Salt Creek. These soils are in areas where the hilly terrain, wooded slopes, and numerous streams provide a variety of locations suited to recreational uses.

The soils of the survey area are rated in tables 12a and 12b according to limitations that affect their suitability for recreation. The ratings are both verbal and numerical. Rating class terms indicate the extent to which the soils are limited by all of the soil features that affect the recreational uses. *Not limited* indicates that the soil has features that are very favorable for the specified use. Good performance and very low

Figure 18.—Birkbeck, Russell, and Senachwine soils surround the lake at Weldon Springs State Park. This lake and Clinton Lake provide the area with fishing, hunting, and other types of recreational opportunities.

maintenance can be expected. *Somewhat limited* indicates that the soil has features that are moderately favorable for the specified use. The limitations can be overcome or minimized by special planning, design, or installation. Fair performance and moderate maintenance can be expected. *Very limited* indicates that the soil has one or more features that are unfavorable for the specified use. The limitations generally cannot be overcome without major soil reclamation, special design, or expensive installation procedures. Poor performance and high maintenance can be expected.

Numerical ratings in the tables indicate the severity of individual limitations. The ratings are shown as decimal fractions ranging from 0.01 to 1.00. They indicate gradations between the point at which a soil feature has the greatest negative impact on the use (1.00) and the point at which the soil feature is not a limitation (0.00).

The ratings in the tables are based on restrictive soil features, such as wetness, slope, and texture of the surface layer. Susceptibility to flooding is considered. Not considered in the ratings, but important in evaluating a site, are the location and accessibility of the area, the size and shape of the area and its scenic quality, vegetation, access to water, potential water impoundment sites, and access to public sewer lines. The capacity of the soil to absorb septic tank effluent and the ability of the soil to support vegetation also are important. Soils that are subject to flooding are limited for recreational uses by the duration and intensity of flooding and the season when flooding occurs. In planning recreational facilities, onsite assessment of the height, duration, intensity, and frequency of flooding is essential.

The information in tables 12a and 12b can be supplemented by other information in this survey, for example, interpretations for building site development, construction materials, sanitary facilities, and water management.

Camp areas require site preparation, such as shaping and leveling the tent and parking areas, stabilizing roads and intensively used areas, and installing sanitary facilities and utility lines. Camp areas are subject to heavy foot traffic and some vehicular traffic (fig. 19). The ratings are based on the soil properties that affect the ease of developing camp areas and the performance of the areas after development. Slope, stoniness, and depth to bedrock or a cemented pan are the main concerns affecting the development of camp areas. The soil properties that affect the performance of the areas after development are those that influence trafficability and promote the growth of vegetation, especially in heavily used areas. For good trafficability, the surface of camp areas should absorb rainfall readily, remain firm under heavy foot traffic, and not be dusty when dry. The soil properties that influence trafficability are texture of the surface layer, depth to a water table, ponding, flooding, permeability, and large stones. The soil properties that affect the growth of plants are depth to bedrock or a cemented pan, permeability, and toxic substances in the soil.

Picnic areas are subject to heavy foot traffic. Most vehicular traffic is confined to access roads and parking areas. The ratings are based on the soil properties that affect the ease of developing picnic areas and that influence trafficability and the growth of vegetation after development. Slope and stoniness are the main concerns affecting the development of picnic areas. For good trafficability, the surface of picnic areas should absorb rainfall readily, remain firm under heavy foot traffic, and not be dusty when dry. The soil properties that influence trafficability are texture of the surface layer, depth to a water table, ponding, flooding, permeability, and large stones. The soil properties that affect the growth of plants are depth to bedrock or a cemented pan, permeability, and toxic substances in the soil.

Playgrounds require soils that are nearly level, are free of stones, and can withstand intensive foot traffic (fig. 20). The ratings are based on the soil properties that affect the ease of developing playgrounds and that influence trafficability and the growth of vegetation after development. Slope and stoniness are the main concerns affecting the development of playgrounds. For good trafficability, the surface of the playgrounds should absorb rainfall readily, remain firm under heavy foot traffic, and not

Figure 19.—A campground in an area of Birkbeck soils at the Mascoutin State Recreation Area.

be dusty when dry. The soil properties that influence trafficability are texture of the surface layer, depth to a water table, ponding, flooding, permeability, and large stones. The soil properties that affect the growth of plants are depth to bedrock or a cemented pan, permeability, and toxic substances in the soil.

Paths and trails for hiking and horseback riding should require little or no slope modification through cutting and filling (fig. 21). The ratings are based on the soil properties that affect trafficability and erodibility. These properties are stoniness, depth to a water table, ponding, flooding, slope, and texture of the surface layer.

Off-road motorcycle trails require little or no site preparation. They are not covered with surfacing material or vegetation. Considerable compaction of the soil material is likely. The ratings are based on the soil properties that influence erodibility, trafficability, dustiness, and the ease of revegetation. These properties are stoniness, slope, depth to a water table, ponding, flooding, and texture of the surface layer.

Golf fairways are subject to heavy foot traffic and some light vehicular traffic. Cutting or filling may be required. Irrigation is not considered in the ratings. The ratings are based on the soil properties that affect plant growth and trafficability after vegetation is established. The properties that affect plant growth are reaction; depth to a water table; ponding; depth to bedrock or a cemented pan; the available water capacity in the upper 40 inches; the content of salts, sodium, or calcium carbonate; and sulfidic materials. The properties that affect trafficability are flooding, depth to a water table, ponding, slope, stoniness, and the amount of sand, clay, or organic matter in the surface layer. The suitability of the soil for traps, tees, roughs, and greens is not considered in the ratings.

Wildlife Habitat

Much of De Witt County was once part of a broad, tall-grass prairie that contained wet meadows, marshes, and areas of open water. Although some areas were woodlands, especially those along creeks and on moderately steep to very steep landforms, the native plant communities were dominated by tall prairie grasses.

As the county was settled, the conversion of land for agriculture and urbanization altered these natural communities and the wildlife species associated with them. The landscape of De Witt County is now a mosaic of urban development, cropland, pasture, isolated areas of forestland, wetlands, and waterways that support wildlife species that are able to adapt to the human-altered landscape. These species include whitetail deer, fox, coyotes, mourning doves, pheasants, squirrels, cardinals, and raccoons.

The largest area in De Witt County managed for wildlife is the Clinton Lake State Recreation Area (fig. 22), which is managed by the Illinois Department of Natural Resources. This area covers about 9,300 acres and includes a 4,900-acre lake.

Other areas used as wildlife habitat are not necessarily set aside for this purpose. Wildlife habitat is commonly a secondary use in areas used for other purposes, such as farming. For example, the large areas of nearly level and gently sloping soils used for cultivated crops and pasture are also generally well suited to use as habitat for openland wildlife. Most areas in the county can be improved for wildlife habitat by providing needed food, cover, and water.

Figure 20.—Birkbeck soils are well suited to playgrounds. Pictured is an area in Weldon Springs State Park.

Figure 21.—A hiking trail in an area of Russell soils.

Soils affect the kind and amount of vegetation that is available to wildlife as food and cover. They also affect the construction of water impoundments. The kind and abundance of wildlife depend largely on the amount and distribution of food, cover, and water. Wildlife habitat can be created or improved by planting appropriate vegetation, by maintaining the existing plant cover, or by promoting the natural establishment of desirable plants.

In table 13, the soils in the survey area are rated according to their potential for providing habitat for various kinds of wildlife. This information can be used in planning parks, wildlife refuges, nature study areas, and other developments for wildlife; in selecting soils that are suitable for establishing, improving, or maintaining specific elements of wildlife habitat; and in determining the intensity of management needed for each element of the habitat.

The potential of the soil is rated good, fair, poor, or very poor. A rating of *good* indicates that the element or kind of habitat is easily established, improved, or maintained. Few or no limitations affect management, and satisfactory results can be expected. A rating of *fair* indicates that the element or kind of habitat can be established, improved, or maintained in most places. Moderately intensive management is required for satisfactory results. A rating of *poor* indicates that limitations are severe for the designated element or kind of habitat. Habitat can be created, improved, or maintained in most places, but management is difficult and must be intensive. A rating of *very poor* indicates that restrictions for the element or kind of habitat are very severe and that unsatisfactory results can be expected. Creating, improving, or maintaining habitat is impractical or impossible.

The elements of wildlife habitat are described in the following paragraphs.

Grain and seed crops are domestic grains and seed-producing herbaceous plants. Soil properties and features that affect the growth of grain and seed crops are depth of

the root zone, texture of the surface layer, available water capacity, wetness, slope, surface stoniness, and flooding. Soil temperature and soil moisture also are considerations. Examples of grain and seed crops are corn, wheat, oats, and barley.

Grasses and legumes are domestic perennial grasses and herbaceous legumes. Soil properties and features that affect the growth of grasses and legumes are depth of the root zone, texture of the surface layer, available water capacity, wetness, surface stoniness, flooding, and slope. Soil temperature and soil moisture also are considerations. Examples of grasses and legumes are lovegrass, orchardgrass, bromegrass, clover, and alfalfa.

Wild herbaceous plants are native or naturally established grasses and forbs, including weeds. Soil properties and features that affect the growth of these plants are depth of the root zone, texture of the surface layer, available water capacity, wetness, surface stoniness, and flooding. Soil temperature and soil moisture also are considerations. Examples of wild herbaceous plants are bluestem, goldenrod, ragweed, wildrye, and Illinois bundleflower.

Hardwood trees and woody understory produce nuts or other fruit, buds, catkins, twigs, bark, and foliage. Soil properties and features that affect the growth of hardwood trees and shrubs are depth of the root zone, available water capacity, and wetness. Examples of these plants are oak, hickory, sycamore, cottonwood, elm, sassafras, serviceberry, gray dogwood, flowering dogwood, hazelnut, sumac, and raspberry. On soils rated *good*, native plants, such as hazelnut, gray dogwood, silky dogwood, oak, and hickory, are the best selections for planting.

Coniferous plants furnish browse and seeds. Soil properties and features that affect the growth of coniferous trees, shrubs, and ground cover are depth of the root zone, available water capacity, and wetness. Examples of coniferous plants are white pine, Norway spruce, balsam fir, red cedar, and juniper.

Figure 22.—Grassland in an area of Orthents at Clinton Lake State Recreation Area stabilizes the soil and provides habitat for an abundance of wildlife species.

Wetland plants are annual and perennial wild herbaceous plants that grow on moist or wet sites. Submerged or floating aquatic plants are excluded. Soil properties and features affecting wetland plants are texture of the surface layer, wetness, reaction, salinity, slope, and surface stoniness. Examples of wetland plants are smartweed, wild millet, wildrice, saltgrass, cordgrass, rushes, sedges, and reeds.

Shallow water areas have an average depth of less than 5 feet. Some are naturally wet areas. Others are created by dams, levees, or other water-control structures. Soil properties and features affecting shallow water areas are depth to bedrock, wetness, surface stoniness, slope, and permeability. Examples of shallow water areas are marshes, waterfowl feeding areas, and ponds.

Shallow water areas can often be included in the design of ponds and lakes by utilizing the naturally shallow end of the impoundment. Wetland areas can also be created by installing water control valves on field drainage tiles, which allows flooding of fields at times not necessary for crop production, such as after fall harvest. Valves can be opened to drain fields for spring planting while allowing soil moisture to remain high enough for good productivity. Islands, wood duck boxes, and an even mix of open water and aquatic plants help to provide optimum wildlife habitat in permanent wetland areas.

The habitat for various kinds of wildlife is described in the following paragraphs.

Habitat for openland wildlife consists of cropland, pasture, meadows, and areas that are overgrown with grasses, herbs, shrubs, and vines. These areas produce grain and seed crops, grasses and legumes, and wild herbaceous plants. Wildlife attracted to these areas include bobwhite quail, pheasant, meadowlark, field sparrow, cottontail, and red fox.

The habitat for openland wildlife can be improved by seeding roadsides, fence rows, and wildlife travel lanes to perennial plants and legumes, such as smooth bromegrass, timothy, redtop, bluegrass, alfalfa, red clover, ladino clover, and alsike clover. Grassy areas can be enhanced with perennial native prairie grasses, such as big bluestem, little bluestem, switchgrass, and indiangrass. Protecting nesting cover from fire, traffic, grazing, mowing, or other disturbance until after the nesting season also is important.

Warm-season grasses grow best if periodic prescribed burning is applied. Any existing woody cover should be protected from fire and grazing. Establishing hedgerows and windbreaks of trees and shrubs can provide a source of food and roosting areas. Brush piles can be built for cover along fence rows and in odd-shaped areas that are inconvenient for cultivation. Leaving crop residue on the surface after harvest and leaving waste grain in the fields can provide cover and food for wildlife throughout the winter. Also, parts of fields that are adjacent to areas of wildlife cover can be left unharvested.

Habitat for woodland wildlife consists of areas of deciduous and/or coniferous plants and associated grasses, legumes, and wild herbaceous plants. Wildlife attracted to these areas include woodcock, thrushes, woodpeckers, squirrels, gray fox, raccoon, and deer (fig. 23).

Habitat for woodland wildlife can be improved by protecting native trees, shrubs, and prairie plants from grazing by livestock. Also, protecting the areas from uncontrolled fire helps to minimize the destruction of the leaf mulch and of desirable young trees, shrubs, and sprouts that provide food and cover. Establishing hedgerows, farm windbreaks, brush piles, food plots, and strips of grass or grass-legume mixtures can provide additional food and cover. Plantings for food and cover may be difficult to establish and maintain in the more sloping areas because of the hazard of erosion. Food plots of grain or seed crops should be established in the less sloping areas and should be planted on the contour. Leaving dead trees to provide den sites for raccoon, woodpeckers, opossum, and other cavity-dwelling species also improves the habitat.

Figure 23.—Areas of Birkbeck, Russell, and Miami soils provide good habitat for deer.

Habitat for wetland wildlife consists of open, marshy or swampy shallow water areas. Some of the wildlife attracted to such areas are ducks, geese, herons, shore birds, muskrat, mink, frogs, snakes, and turtles.

Measures that improve the habitat for wetland wildlife include delaying or limiting the cultivation and planting of commodity crops in the shallow depressions that are subject to ponding. Areas of smartweeds, bulrushes, burreeds, and barnyard grasses should be protected. Japanese millet, milo, and short corn varieties can be planted to provide food and cover. Blocking natural channels and manmade drainage systems can create shallow ponds and marshes. Pits dug in poorly drained or very poorly drained soils should be at least 30 feet in diameter and 2 to 3 feet deep. Such pits provide open water through the spring and early summer and thus encourage nesting by ducks. Wetland areas should be protected from grazing by livestock.

Engineering

This section provides information for planning land uses related to urban development and to water management. Soils are rated for various uses, and the most limiting features are identified. Ratings are given for building site development, sanitary facilities, construction materials, and water management. The ratings are based on observed performance of the soils and on the data in the tables described under the heading “Soil Properties.”

Information in this section is intended for land use planning, for evaluating land use alternatives, and for planning site investigations prior to design and construction. The information, however, has limitations. For example, estimates and other data generally

apply only to that part of the soil between the surface and a depth of 5 to 7 feet. Because of the map scale, small areas of different soils may be included within the mapped areas of a specific soil.

The information is not site specific and does not eliminate the need for onsite investigation of the soils or for testing and analysis by personnel experienced in the design and construction of engineering works.

Government ordinances and regulations that restrict certain land uses or impose specific design criteria were not considered in preparing the information in this section. Local ordinances and regulations should be considered in planning, in site selection, and in design.

Soil properties, site features, and observed performance were considered in determining the ratings in this section. During the fieldwork for this soil survey, determinations were made about particle-size distribution, liquid limit, plasticity index, soil reaction, depth to bedrock, hardness of bedrock within 5 to 7 feet of the surface, soil wetness, depth to a water table, ponding, slope, likelihood of flooding, natural soil structure aggregation, and soil density. Data were collected about kinds of clay minerals, mineralogy of the sand and silt fractions, and the kinds of adsorbed cations. Estimates were made for erodibility, permeability, corrosivity, shrink-swell potential, available water capacity, and other behavioral characteristics affecting engineering uses.

This information can be used to evaluate the potential of areas for residential, commercial, industrial, and recreational uses; make preliminary estimates of construction conditions; evaluate alternative routes for roads, streets, highways, pipelines, and underground cables; evaluate alternative sites for sanitary landfills, septic tank absorption fields, and sewage lagoons; plan detailed onsite investigations of soils and geology; locate potential sources of sand, reclamation material, roadfill, and topsoil; plan structures for water management; and predict performance of proposed small structures and pavements by comparing the performance of existing similar structures on the same or similar soils.

The information in the tables, along with the soil maps, the soil descriptions, and other data provided in this survey, can be used to make additional interpretations.

Some of the terms used in this soil survey have a special meaning in soil science and are defined in the Glossary.

Building Site Development

Soil properties influence the development of building sites, including the selection of the site, the design of the structure, construction, performance after construction, and maintenance. Tables 14a and 14b show the degree and kind of soil limitations that affect dwellings with and without basements, small commercial buildings, local roads and streets, shallow excavations, and lawns and landscaping.

The ratings in the tables are both verbal and numerical. Rating class terms indicate the extent to which the soils are limited by all of the soil features that affect building site development. *Not limited* indicates that the soil has features that are very favorable for the specified use. Good performance and very low maintenance can be expected. *Somewhat limited* indicates that the soil has features that are moderately favorable for the specified use. The limitations can be overcome or minimized by special planning, design, or installation. Fair performance and moderate maintenance can be expected. *Very limited* indicates that the soil has one or more features that are unfavorable for the specified use. The limitations generally cannot be overcome without major soil reclamation, special design, or expensive installation procedures. Poor performance and high maintenance can be expected.

Numerical ratings in the tables indicate the severity of individual limitations. The ratings are shown as decimal fractions ranging from 0.01 to 1.00. They indicate

gradations between the point at which a soil feature has the greatest negative impact on the use (1.00) and the point at which the soil feature is not a limitation (0.00).

Dwellings are single-family houses of three stories or less. For dwellings without basements, the foundation is assumed to consist of spread footings of reinforced concrete built on undisturbed soil at a depth of 2 feet or at the depth of maximum frost penetration, whichever is deeper. For dwellings with basements, the foundation is assumed to consist of spread footings of reinforced concrete built on undisturbed soil at a depth of about 7 feet. The ratings for dwellings are based on the soil properties that affect the capacity of the soil to support a load without movement and on the properties that affect excavation and construction costs. The properties that affect the load-supporting capacity include depth to a water table, ponding, flooding, subsidence, linear extensibility (shrink-swell potential), and compressibility. Compressibility is inferred from the Unified classification. The properties that affect the ease and amount of excavation include depth to a water table, ponding, flooding, slope, depth to bedrock or a cemented pan, hardness of bedrock or a cemented pan, and the amount and size of rock fragments.

Small commercial buildings are structures that are less than three stories high and do not have basements. The foundation is assumed to consist of spread footings of reinforced concrete built on undisturbed soil at a depth of 2 feet or at the depth of maximum frost penetration, whichever is deeper. The ratings are based on the soil properties that affect the capacity of the soil to support a load without movement and on the properties that affect excavation and construction costs. The properties that affect the load-supporting capacity include depth to a water table, ponding, flooding, subsidence, linear extensibility (shrink-swell potential), and compressibility (which is inferred from the Unified classification). The properties that affect the ease and amount of excavation include flooding, depth to a water table, ponding, slope, depth to bedrock or a cemented pan, hardness of bedrock or a cemented pan, and the amount and size of rock fragments.

Local roads and streets have an all-weather surface and carry automobile and light truck traffic all year. They have a subgrade of cut or fill soil material; a base of gravel, crushed rock, or soil material stabilized by lime or cement; and a surface of flexible material (asphalt), rigid material (concrete), or gravel with a binder. The ratings are based on the soil properties that affect the ease of excavation and grading and the traffic-supporting capacity. The properties that affect the ease of excavation and grading are depth to bedrock or a cemented pan, hardness of bedrock or a cemented pan, depth to a water table, ponding, flooding, the amount of large stones, and slope. The properties that affect the traffic-supporting capacity are soil strength (as inferred from the AASHTO group index number), subsidence, linear extensibility (shrink-swell potential), the potential for frost action, depth to a water table, and ponding.

Shallow excavations are trenches or holes dug to a maximum depth of 5 or 6 feet for graves, utility lines, open ditches, or other purposes. The ratings are based on the soil properties that influence the ease of digging and the resistance to sloughing. Depth to bedrock or a cemented pan, hardness of bedrock or a cemented pan, the amount of large stones, and dense layers influence the ease of digging, filling, and compacting. Depth to the seasonal high water table, flooding, and ponding may restrict the period when excavations can be made. Slope influences the ease of using machinery. Soil texture, depth to the water table, and linear extensibility (shrink-swell potential) influence the resistance to sloughing.

Lawns and landscaping require soils on which turf and ornamental trees and shrubs can be established and maintained. Irrigation is not considered in the ratings. The ratings are based on the soil properties that affect plant growth and trafficability after vegetation is established. The properties that affect plant growth are reaction; depth to a water table; ponding; depth to bedrock or a cemented pan; the available water capacity in the upper 40 inches; the content of salts, sodium, or calcium carbonate;

and sulfidic materials. The properties that affect trafficability are flooding, depth to a water table, ponding, slope, stoniness, and the amount of sand, clay, or organic matter in the surface layer.

Sanitary Facilities

Tables 15a and 15b show the degree and kind of soil limitations that affect septic tank absorption fields, sewage lagoons, sanitary landfills, and daily cover for landfill. The ratings are both verbal and numerical. Rating class terms indicate the extent to which the soils are limited by all of the soil features that affect these uses. *Not limited* indicates that the soil has features that are very favorable for the specified use. Good performance and very low maintenance can be expected. *Somewhat limited* indicates that the soil has features that are moderately favorable for the specified use. The limitations can be overcome or minimized by special planning, design, or installation. Fair performance and moderate maintenance can be expected. *Very limited* indicates that the soil has one or more features that are unfavorable for the specified use. The limitations generally cannot be overcome without major soil reclamation, special design, or expensive installation procedures. Poor performance and high maintenance can be expected.

Numerical ratings in the tables indicate the severity of individual limitations. The ratings are shown as decimal fractions ranging from 0.01 to 1.00. They indicate gradations between the point at which a soil feature has the greatest negative impact on the use (1.00) and the point at which the soil feature is not a limitation (0.00).

Septic tank absorption fields are areas in which effluent from a septic tank is distributed into the soil through subsurface tiles or perforated pipe. Only that part of the soil between depths of 24 and 60 inches is evaluated. The ratings are based on the soil properties that affect absorption of the effluent, construction and maintenance of the system, and public health. Permeability, depth to a water table, ponding, depth to bedrock or a cemented pan, and flooding affect absorption of the effluent. Stones and boulders, ice, and bedrock or a cemented pan interfere with installation. Subsidence interferes with installation and maintenance. Excessive slope may cause lateral seepage and surfacing of the effluent in downslope areas.

Some soils are underlain by loose sand and gravel or fractured bedrock at a depth of less than 4 feet below the distribution lines. In these soils the absorption field may not adequately filter the effluent, particularly when the system is new. As a result, the ground water may become contaminated.

Sewage lagoons are shallow ponds constructed to hold sewage while aerobic bacteria decompose the solid and liquid wastes. Lagoons should have a nearly level floor surrounded by cut slopes or embankments of compacted soil. Nearly impervious soil material for the lagoon floor and sides is required to minimize seepage and contamination of ground water. Considered in the ratings are slope, permeability, depth to a water table, ponding, depth to bedrock or a cemented pan, flooding, large stones, and content of organic matter.

Soil permeability is a critical property affecting the suitability for sewage lagoons. Most porous soils eventually become sealed when they are used as sites for sewage lagoons. Until sealing occurs, however, the hazard of pollution is severe. Soils that have a permeability rate of more than 2 inches per hour are too porous for the proper functioning of sewage lagoons. In these soils, seepage of the effluent can result in contamination of the ground water. Ground-water contamination is also a hazard if fractured bedrock is within a depth of 40 inches, if the water table is high enough to raise the level of sewage in the lagoon, or if floodwater overtops the lagoon.

A high content of organic matter is detrimental to proper functioning of the lagoon because it inhibits aerobic activity. Slope, bedrock, and cemented pans can cause construction problems, and large stones can hinder compaction of the lagoon floor. If

the lagoon is to be uniformly deep throughout, the slope must be gentle enough and the soil material must be thick enough over bedrock or a cemented pan to make land smoothing practical.

A *trench sanitary landfill* is an area where solid waste is placed in successive layers in an excavated trench. The waste is spread, compacted, and covered daily with a thin layer of soil excavated at the site. When the trench is full, a final cover of soil material at least 2 feet thick is placed over the landfill. The ratings in the table are based on the soil properties that affect the risk of pollution, the ease of excavation, trafficability, and revegetation. These properties include permeability, depth to bedrock or a cemented pan, depth to a water table, ponding, slope, flooding, texture, stones and boulders, highly organic layers, soil reaction, and content of salts and sodium. Unless otherwise stated, the ratings apply only to that part of the soil within a depth of about 6 feet. For deeper trenches, onsite investigation may be needed.

Hard, nonrippable bedrock, creviced bedrock, or highly permeable strata in or directly below the proposed trench bottom can affect the ease of excavation and the hazard of ground-water pollution. Slope affects construction of the trenches and the movement of surface water around the landfill. It also affects the construction and performance of roads in areas of the landfill.

Soil texture and consistence affect the ease with which the trench is dug and the ease with which the soil can be used as daily or final cover. They determine the workability of the soil when dry and when wet. Soils that are plastic and sticky when wet are difficult to excavate, grade, or compact and are difficult to place as a uniformly thick cover over a layer of refuse.

The soil material used as the final cover for a trench landfill should be suitable for plants. It should not have excess sodium or salts and should not be too acid. The surface layer generally has the best workability, the highest content of organic matter, and the best potential for plants. Material from the surface layer should be stockpiled for use as the final cover.

In an *area sanitary landfill*, solid waste is placed in successive layers on the surface of the soil. The waste is spread, compacted, and covered daily with a thin layer of soil from a source away from the site. A final cover of soil material at least 2 feet thick is placed over the completed landfill. The ratings in the table are based on the soil properties that affect trafficability and the risk of pollution. These properties include flooding, permeability, depth to a water table, ponding, slope, and depth to bedrock or a cemented pan.

Flooding is a serious problem because it can result in pollution in areas downstream from the landfill. If permeability is too rapid or if fractured bedrock, a fractured cemented pan, or the water table is close to the surface, the leachate can contaminate the water supply. Slope is a consideration because of the extra grading required to maintain roads in the steeper areas of the landfill. Also, leachate may flow along the surface of the soils in the steeper areas and cause difficult seepage problems.

Daily cover for landfill is the soil material that is used to cover compacted solid waste in an area sanitary landfill. The soil material is obtained offsite, transported to the landfill, and spread over the waste. The ratings in the table also apply to the final cover for a landfill. They are based on the soil properties that affect workability, the ease of digging, and the ease of moving and spreading the material over the refuse daily during wet and dry periods. These properties include soil texture, depth to a water table, ponding, rock fragments, slope, depth to bedrock or a cemented pan, reaction, and content of salts, sodium, or lime.

Loamy or silty soils that are free of large stones and excess gravel are the best cover for a landfill. Clayey soils may be sticky and difficult to spread; sandy soils are subject to wind erosion.

Slope affects the ease of excavation and of moving the cover material. Also, it can influence runoff, erosion, and reclamation of the borrow area.

After soil material has been removed, the soil material remaining in the borrow area must be thick enough over bedrock, a cemented pan, or the water table to permit revegetation. The soil material used as the final cover for a landfill should be suitable for plants. It should not have excess sodium, salts, or lime and should not be too acid.

Construction Materials

Tables 16a and 16b give information about the soils as potential sources of reclamation material, roadfill, topsoil, and sand. Normal compaction, minor processing, and other standard construction practices are assumed.

In table 16a, the rating class terms are *good, fair,* and *poor*. The features that limit the soils as sources of these materials are specified in the table. The numerical ratings given after the specified features indicate the degree to which the features limit the soils as sources of reclamation material, roadfill, and topsoil. The lower the number, the greater the limitation.

Reclamation material is used in areas that have been drastically disturbed by surface mining or similar activities. When these areas are reclaimed, layers of soil material or unconsolidated geological material, or both, are replaced in a vertical sequence. The reconstructed soil favors plant growth. The ratings in the table do not apply to quarries and other mined areas that require an offsite source of reconstruction material. The ratings are based on the soil properties that affect erosion and stability of the surface and the productive potential of the reconstructed soil. These properties include the content of sodium, salts, and calcium carbonate; reaction; available water capacity; erodibility; texture; content of rock fragments; and content of organic matter and other features that affect fertility.

Roadfill is soil material that is excavated in one place and used in road embankments in another place. In this table, the soils are rated as a source of roadfill for low embankments, generally less than 6 feet high and less exacting in design than higher embankments.

The ratings are for the whole soil, from the surface to a depth of about 5 feet. It is assumed that soil layers will be mixed when the soil material is excavated and spread.

The ratings are based on the amount of suitable material and on soil properties that affect the ease of excavation and the performance of the material after it is in place. The thickness of the suitable material is a major consideration. The ease of excavation is affected by large stones, depth to a water table, and slope. How well the soil performs in place after it has been compacted and drained is determined by its strength (as inferred from the AASHTO classification of the soil) and linear extensibility (shrink-swell potential).

Topsoil is used to cover an area so that vegetation can be established and maintained. The upper 40 inches of a soil is evaluated for use as topsoil. Also evaluated is the reclamation potential of the borrow area. The ratings are based on the soil properties that affect plant growth; the ease of excavating, loading, and spreading the material; and reclamation of the borrow area. Toxic substances, soil reaction, and the properties that are inferred from soil texture, such as available water capacity and fertility, affect plant growth. The ease of excavating, loading, and spreading is affected by rock fragments, slope, depth to a water table, soil texture, and thickness of suitable material. Reclamation of the borrow area is affected by slope, depth to a water table, rock fragments, depth to bedrock or a cemented pan, and toxic material.

The surface layer of most soils is generally preferred for topsoil because of its organic matter content. Organic matter greatly increases the absorption and retention of moisture and nutrients for plant growth.

Sand is a natural aggregate suitable for commercial use with a minimum of processing. It is used in many kinds of construction. Specifications for each use vary widely. In table 16b, only the likelihood of finding material in suitable quantity is evaluated. The suitability of the material for specific purposes is not evaluated, nor are factors that affect excavation of the material. The properties used to evaluate the soil as a source of sand are gradation of grain sizes (as indicated by the Unified classification of the soil), the thickness of suitable material, and the content of rock fragments. If the bottom layer of the soil contains sand, the soil is considered a likely source regardless of thickness. The assumption is that the sand layer below the depth of observation exceeds the minimum thickness.

The soils are rated *good, fair,* or *poor* as potential sources of sand. A rating of *good* or *fair* means that the source material is likely to be in or below the soil. The bottom layer and the thickest layer of the soils are assigned numerical ratings. These ratings indicate the likelihood that the layer is a source of sand. The number 0.00 indicates that the layer is a poor source. The number 1.00 indicates that the layer is a good source. A number between 0.00 and 1.00 indicates the degree to which the layer is a likely source.

Water Management

Tables 17a and 17b give information on the soil properties and site features that affect water management. The degree and kind of soil limitations are given for pond reservoir areas; embankments, dikes, and levees; aquifer-fed excavated ponds; grassed waterways and surface drains; terraces and diversions; and tile drains and underground outlets. The ratings are both verbal and numerical. Rating class terms indicate the extent to which the soils are limited by all of the soil features that affect these uses. *Not limited* indicates that the soil has features that are very favorable for the specified use. Good performance and very low maintenance can be expected. *Somewhat limited* indicates that the soil has features that are moderately favorable for the specified use. The limitations can be overcome or minimized by special planning, design, or installation. Fair performance and moderate maintenance can be expected. *Very limited* indicates that the soil has one or more features that are unfavorable for the specified use. The limitations generally cannot be overcome without major soil reclamation, special design, or expensive installation procedures. Poor performance and high maintenance can be expected.

Numerical ratings in the tables indicate the severity of individual limitations. The ratings are shown as decimal fractions ranging from 0.01 to 1.00. They indicate gradations between the point at which a soil feature has the greatest negative impact on the use (1.00) and the point at which the soil feature is not a limitation (0.00).

Table 17a

Pond reservoir areas hold water behind a dam or embankment (fig. 24). Soils best suited to this use have low seepage potential in the upper 60 inches. The seepage potential is determined by the permeability of the soil and the depth to fractured bedrock or other permeable material. Excessive slope can affect the storage capacity of the reservoir area.

Embankments, dikes, and levees are raised structures of soil material, generally less than 20 feet high, constructed to impound water or to protect land against overflow. Embankments that have zoned construction (core and shell) are not considered. In this table, the soils are rated as a source of material for embankment fill. The ratings apply to the soil material below the surface layer to a depth of about 5 feet. It is assumed that soil layers will be uniformly mixed and compacted during construction.

Figure 24.—This excavated pond in an area of Sable soils is one of many such ponds scattered throughout the county. The ponds provide recreational opportunities and habitat for wildlife.

The ratings do not indicate the ability of the natural soil to support an embankment. Soil properties to a depth even greater than the height of the embankment can affect performance and safety of the embankment. Generally, deeper onsite investigation is needed to determine these properties.

Soil material in embankments must be resistant to seepage, piping, and erosion and have favorable compaction characteristics. Unfavorable features include less than 5 feet of suitable material and a high content of stones or boulders, organic matter, or salts or sodium. A high water table affects the amount of usable material. It also affects trafficability.

Aquifer-fed excavated ponds are pits or dugouts that extend to a ground-water aquifer or to a depth below a permanent water table. Excluded are ponds that are fed only by surface runoff and embankment ponds that impound water 3 feet or more above the original surface. Excavated ponds are affected by depth to a permanent water table, permeability of the aquifer, and quality of the water as inferred from the salinity of the soil. Depth to bedrock and the content of large stones affect the ease of excavation.

Table 17b

Grassed waterways and surface drains are natural or constructed channels, generally broad and shallow, that conduct surface water to outlets at a nonerosive velocity. Large stones, wetness, slope, and depth to bedrock affect the construction of grassed waterways. A hazard of wind erosion, a low available water capacity, restricted rooting depth, toxic substances such as salts and sodium, and restricted permeability adversely affect the growth and maintenance of the grass after construction.

Terraces and diversions are embankments or a combination of channels and ridges constructed across a slope to control erosion and conserve moisture by intercepting runoff. Slope, wetness, large stones, and depth to bedrock affect the construction of terraces and diversions. A restricted rooting depth, a severe hazard of wind erosion or water erosion, an excessively coarse texture, and restricted permeability adversely affect maintenance.

Tile drains and underground outlets are used in some areas to remove excess subsurface and surface water from the soil. The ratings in the table apply to undisturbed soils that commonly have a seasonal high water table within a depth of about 3.5 feet. Current land use is not considered in the ratings. Depth to bedrock, a dense layer, or a cemented pan, the content of large stones, and the content of clay influence the ease of digging, filling, and compacting. A seasonal high water table, ponding, and flooding may restrict the period when excavations can be made. The slope influences the use of machinery. Soil texture and depth to the water table influence the resistance to sloughing. Subsidence of organic layers influences grade and stability of tile drains. Limitations affecting areas where the tile line passes through soils in which the water table is generally below a depth of 3.5 feet are provided in the table that includes the column “shallow excavations,” which is described under the heading “Building Site Development.”

Soil Properties

Data relating to soil properties are collected during the course of the soil survey.

Soil properties are ascertained by field examination of the soils and by laboratory index testing of some benchmark soils. Established standard procedures are followed. During the survey, many shallow borings are made and examined to identify and classify the soils and to delineate them on the soil maps. Samples are taken from some typical profiles and tested in the laboratory to determine particle-size distribution, plasticity, and compaction characteristics.

Estimates of soil properties are based on field examinations, on laboratory tests of samples from the survey area, and on laboratory tests of samples of similar soils in nearby areas. Tests verify field observations, verify properties that cannot be estimated accurately by field observation, and help to characterize key soils.

The estimates of soil properties are shown in tables. They include engineering index properties, physical and chemical properties, and pertinent soil and water features.

Engineering Index Properties

Table 18 gives the engineering classifications and the range of index properties for the layers of each soil in the survey area.

Depth to the upper and lower boundaries of each layer is indicated.

Texture is given in the standard terms used by the U.S. Department of Agriculture. These terms are defined according to percentages of sand, silt, and clay in the fraction of the soil that is less than 2 millimeters in diameter (fig. 25). “Loam,” for example, is soil that is 7 to 27 percent clay, 28 to 50 percent silt, and less than 52 percent sand. If the content of particles coarser than sand is 15 percent or more, an appropriate modifier is added, for example, “gravelly.” Textural terms are defined in the Glossary.

Classification of the soils is determined according to the Unified soil classification system (ASTM, 2005) and the system adopted by the American Association of State Highway and Transportation Officials (AASHTO, 2004).

The Unified system classifies soils according to properties that affect their use as construction material. Soils are classified according to particle-size distribution of the fraction less than 3 inches in diameter and according to plasticity index, liquid limit, and organic matter content. Sandy and gravelly soils are identified as GW, GP, GM, GC, SW, SP, SM, and SC; silty and clayey soils as ML, CL, OL, MH, CH, and OH; and highly organic soils as PT. Soils exhibiting engineering properties of two groups can have a dual classification, for example, CL-ML.

The AASHTO system classifies soils according to those properties that affect roadway construction and maintenance. In this system, the fraction of a mineral soil that is less than 3 inches in diameter is classified in one of seven groups from A-1 through A-7 on the basis of particle-size distribution, liquid limit, and plasticity index. Soils in group A-1 are coarse grained and low in content of fines (silt and clay). At the other extreme, soils in group A-7 are fine grained. Highly organic soils are classified in group A-8 on the basis of visual inspection.

If laboratory data are available, the A-1, A-2, and A-7 groups are further classified as A-1-a, A-1-b, A-2-4, A-2-5, A-2-6, A-2-7, A-7-5, or A-7-6. As an additional refinement, the suitability of a soil as subgrade material can be indicated by a group

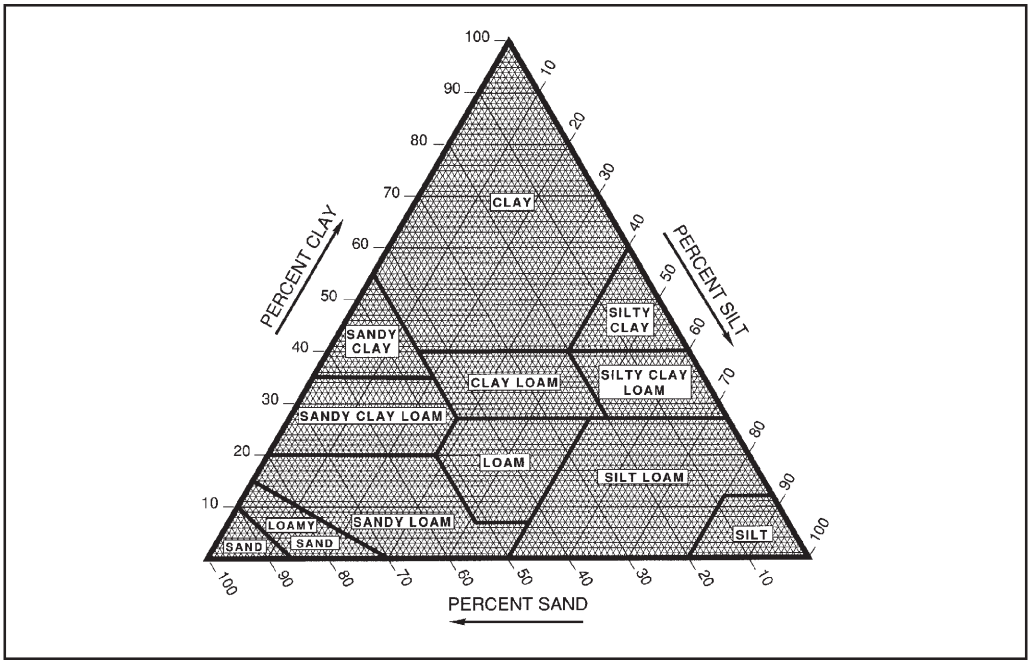


Figure 25.—Percentages of clay, silt, and sand in the basic USDA soil textural classes.

index number. Group index numbers range from 0 for the best subgrade material to 20 or higher for the poorest.

Rock fragments larger than 10 inches in diameter and 3 to 10 inches in diameter are indicated as a percentage of the total soil on a dry-weight basis. The percentages are estimates determined mainly by converting volume percentage in the field to weight percentage.

Percentage (of soil particles) passing designated sieves is the percentage of the soil fraction less than 3 inches in diameter based on an ovendry weight. The sieves, numbers 4, 10, 40, and 200 (USA Standard Series), have openings of 4.76, 2.00, 0.420, and 0.074 millimeters, respectively. Estimates are based on laboratory tests of soils sampled in the survey area and in nearby areas and on estimates made in the field.

Liquid limit and *plasticity index* (Atterberg limits) indicate the plasticity characteristics of a soil. The estimates are based on test data from the survey area or from nearby areas and on field examination.

The estimates of particle-size distribution, liquid limit, and plasticity index are generally rounded to the nearest 5 percent. Thus, if the ranges of gradation and Atterberg limits extend a marginal amount (1 or 2 percentage points) across classification boundaries, the classification in the marginal zone is generally omitted in the table.

Physical Properties

Table 19 shows estimates of some physical characteristics and features that affect soil behavior. These estimates are given for the layers of each soil in the survey area. The estimates are based on field observations and on test data for these and similar soils.

Depth to the upper and lower boundaries of each layer is indicated.

Particle size is the effective diameter of a soil particle as measured by sedimentation, sieving, or micrometric methods. Particle sizes are expressed as

classes with specific effective diameter class limits. The broad classes are sand, silt, and clay, ranging from the larger to the smaller.

Sand as a soil separate consists of mineral soil particles that are 0.05 millimeter to 2 millimeters in diameter. In the table, the estimated sand content of each soil layer is given as a percentage, by weight, of the soil material that is less than 2 millimeters in diameter.

Silt as a soil separate consists of mineral soil particles that are 0.002 to 0.05 millimeter in diameter. In the table, the estimated silt content of each soil layer is given as a percentage, by weight, of the soil material that is less than 2 millimeters in diameter.

Clay as a soil separate consists of mineral soil particles that are less than 0.002 millimeter in diameter. In the table, the estimated clay content of each soil layer is given as a percentage, by weight, of the soil material that is less than 2 millimeters in diameter.

The content of sand, silt, and clay affects the physical behavior of a soil. Particle size is important for engineering and agronomic interpretations, for determination of soil hydrologic qualities, and for soil classification.

The amount and kind of clay affect the fertility and physical condition of the soil and the ability of the soil to adsorb cations and to retain moisture. They influence shrink-swell potential, permeability, plasticity, the ease of soil dispersion, and other soil properties. The amount and kind of clay in a soil also affect tillage and earthmoving operations.

Moist bulk density is the weight of soil (ovendry) per unit volume. Volume is measured when the soil is at field moisture capacity, that is, the moisture content at $^{1}/_{3}$- or $^{1}/_{10}$-bar (33kPa or 10kPa) moisture tension. Weight is determined after the soil is dried at 105 degrees C. In the table, the estimated moist bulk density of each soil horizon is expressed in grams per cubic centimeter of soil material that is less than 2 millimeters in diameter. Bulk density data are used to compute shrink-swell potential, available water capacity, total pore space, and other soil properties. The moist bulk density of a soil indicates the pore space available for water and roots. Depending on soil texture, a bulk density of more than 1.4 can restrict water storage and root penetration. Moist bulk density is influenced by texture, kind of clay, content of organic matter, and soil structure.

Permeability (Ksat) refers to the ability of a soil to transmit water or air. The term “permeability,” as used in soil surveys, indicates saturated hydraulic conductivity (Ksat). The estimates in the table indicate the rate of water movement, in inches per hour, when the soil is saturated. They are based on soil characteristics observed in the field, particularly structure, porosity, and texture. Permeability is considered in the design of soil drainage systems and septic tank absorption fields.

Available water capacity refers to the quantity of water that the soil is capable of storing for use by plants. The capacity for water storage is given in inches of water per inch of soil for each soil layer. The capacity varies, depending on soil properties that affect retention of water. The most important properties are the content of organic matter, soil texture, bulk density, and soil structure. Available water capacity is an important factor in the choice of plants or crops to be grown and in the design and management of irrigation systems. Available water capacity is not an estimate of the quantity of water actually available to plants at any given time.

Linear extensibility refers to the change in length of an unconfined clod as moisture content is decreased from a moist to a dry state. It is an expression of the volume change between the water content of the clod at $^{1}/_{3}$- or $^{1}/_{10}$-bar tension (33kPa or 10kPa tension) and oven dryness. The volume change is reported in the table as percent change for the whole soil. Volume change is influenced by the amount and type of clay minerals in the soil.

Linear extensibility is used to determine the shrink-swell potential of soils. The shrink-swell potential is low if the soil has a linear extensibility of less than 3 percent; moderate if 3 to 6 percent; high if 6 to 9 percent; and very high if more than 9 percent. If the linear extensibility is more than 3, shrinking and swelling can cause damage to buildings, roads, and other structures and to plant roots. Special design commonly is needed.

Organic matter is the plant and animal residue in the soil at various stages of decomposition. In table 19, the estimated content of organic matter is expressed as a percentage, by weight, of the soil material that is less than 2 millimeters in diameter.

The content of organic matter in a soil can be maintained by returning crop residue to the soil. Organic matter has a positive effect on available water capacity, water infiltration, soil organism activity, and tilth. It is a source of nitrogen and other nutrients for crops.

Erosion factors are shown in table 19 as the K factor (Kw and Kf) and the T factor. Erosion factor K indicates the susceptibility of a soil to sheet and rill erosion by water. Factor K is one of six factors used in the Universal Soil Loss Equation (USLE) and the Revised Universal Soil Loss Equation (RUSLE) to predict the average annual rate of soil loss by sheet and rill erosion in tons per acre per year. The estimates are based primarily on percentage of silt, sand, and organic matter and on soil structure and permeability. Values of K range from 0.02 to 0.69. Other factors being equal, the higher the value, the more susceptible the soil is to sheet and rill erosion by water.

Erosion factor Kw indicates the erodibility of the whole soil. The estimates are modified by the presence of rock fragments.

Erosion factor Kf indicates the erodibility of the fine-earth fraction, or the material less than 2 millimeters in size.

Erosion factor T is an estimate of the maximum average annual rate of soil erosion by wind or water that can occur without affecting crop productivity over a sustained period. The rate is in tons per acre per year.

Wind erodibility groups are made up of soils that have similar properties affecting their susceptibility to wind erosion in cultivated areas. The soils assigned to group 1 are the most susceptible to wind erosion, and those assigned to group 8 are the least susceptible. The groups are described in the “National Soil Survey Handbook” (http://soils.usda.gov).

Wind erodibility index is a numerical value indicating the susceptibility of soil to wind erosion, or the tons per acre per year that can be expected to be lost to wind erosion. There is a close correlation between wind erosion and the texture of the surface layer, the size and durability of surface clods, rock fragments, organic matter, and a calcareous reaction. Soil moisture and frozen soil layers also influence wind erosion.

Chemical Properties

Table 20 shows estimates of some chemical characteristics and features that affect soil behavior. These estimates are given for the layers of each soil in the survey area. The estimates are based on field observations and on test data for these and similar soils.

Depth to the upper and lower boundaries of each layer is indicated.

Cation-exchange capacity is the total amount of extractable bases that can be held by the soil, expressed in terms of milliequivalents per 100 grams of soil at neutrality (pH 7.0) or at some other stated pH value. Soils having a low cation-exchange capacity hold fewer cations and may require more frequent applications of fertilizer than soils having a high cation-exchange capacity. The ability to retain cations reduces the hazard of ground-water pollution.

Effective cation-exchange capacity refers to the sum of extractable bases plus aluminum expressed in terms of milliequivalents per 100 grams of soil. It is determined for soils that have pH of less than 5.5.

Soil reaction is a measure of acidity or alkalinity. The pH of each soil horizon is based on many field tests. For many soils, values have been verified by laboratory analyses. Soil reaction is important in selecting crops and other plants, in evaluating soil amendments for fertility and stabilization, and in determining the risk of corrosion.

Calcium carbonate equivalent is the percent of carbonates, by weight, in the fraction of the soil less than 2 millimeters in size. The availability of plant nutrients is influenced by the amount of carbonates in the soil. Incorporating nitrogen fertilizer into calcareous soils helps to prevent nitrite accumulation and ammonium-N volatilization.

Organic matter is the plant and animal residue in the soil at various stages of decomposition. In table 20, the estimated content of organic matter is expressed as a percentage, by weight, of the soil material that is less than 2 millimeters in diameter.

The content of organic matter in a soil can be maintained by returning crop residue to the soil. Organic matter has a positive effect on available water capacity, water infiltration, soil organism activity, and tilth. It is a source of nitrogen and other nutrients for crops.

Water Features

Table 21 gives estimates of various water features. The estimates are used in land use planning that involves engineering considerations.

Hydrologic soil groups are based on estimates of runoff potential. Soils are assigned to one of four groups according to the rate of water infiltration when the soils are not protected by vegetation, are thoroughly wet, and receive precipitation from long-duration storms.

The four hydrologic soil groups are:

Group A. Soils having a high infiltration rate (low runoff potential) when thoroughly wet. These consist mainly of deep, well drained to excessively drained sands or gravelly sands. These soils have a high rate of water transmission.

Group B. Soils having a moderate infiltration rate when thoroughly wet. These consist chiefly of moderately deep or deep, moderately well drained or well drained soils that have moderately fine texture to moderately coarse texture. These soils have a moderate rate of water transmission.

Group C. Soils having a slow infiltration rate when thoroughly wet. These consist chiefly of soils having a layer that impedes the downward movement of water or soils of moderately fine texture or fine texture. These soils have a slow rate of water transmission.

Group D. Soils having a very slow infiltration rate (high runoff potential) when thoroughly wet. These consist chiefly of clays that have a high shrink-swell potential, soils that have a high water table, soils that have a claypan or clay layer at or near the surface, and soils that are shallow over nearly impervious material. These soils have a very slow rate of water transmission.

If a soil is assigned to a dual hydrologic group (A/D, B/D, or C/D), the first letter is for drained areas and the second is for undrained areas.

Ponding is standing water in a closed depression. Unless a drainage system is installed, the water is removed only by percolation, transpiration, or evaporation. Table 21 indicates *surface water depth* and the *duration* and *frequency* of ponding. Duration is expressed as *very brief* if less than 2 days, *brief* if 2 to 7 days, *long* if 7 to 30 days, and *very long* if more than 30 days. Frequency is expressed as none, rare, occasional, and frequent. *None* means that ponding is not probable; *rare* that it is unlikely but possible under unusual weather conditions (the chance of ponding is nearly 0 percent

to 5 percent in any year); *occasional* that it occurs, on the average, once or less in 2 years (the chance of ponding is 5 to 50 percent in any year); and *frequent* that it occurs, on the average, more than once in 2 years (the chance of ponding is more than 50 percent in any year).

Flooding is the temporary inundation of an area caused by overflowing streams, by runoff from adjacent slopes, or by tides. Water standing for short periods after rainfall or snowmelt is not considered flooding, and water standing in swamps and marshes is considered ponding rather than flooding.

Duration and *frequency* of flooding are estimated. Duration is expressed as *extremely brief* if 0.1 hour to 4 hours, *very brief* if 4 hours to 2 days, *brief* if 2 to 7 days, *long* if 7 to 30 days, and *very long* if more than 30 days. Frequency is expressed as none, very rare, rare, occasional, frequent, and very frequent. *None* means that flooding is not probable; *very rare* that it is very unlikely but possible under extremely unusual weather conditions (the chance of flooding is less than 1 percent in any year); *rare* that it is unlikely but possible under unusual weather conditions (the chance of flooding is 1 to 5 percent in any year); *occasional* that it occurs infrequently under normal weather conditions (the chance of flooding is 5 to 50 percent in any year); *frequent* that it is likely to occur often under normal weather conditions (the chance of flooding is more than 50 percent in any year but is less than 50 percent in all months in any year); and *very frequent* that it is likely to occur very often under normal weather conditions (the chance of flooding is more than 50 percent in all months of any year). *Common* is used when the occasional and frequent classes are grouped for certain purposes.

The information is based on evidence in the soil profile, namely thin strata of gravel, sand, silt, or clay deposited by floodwater; irregular decrease in organic matter content with increasing depth; and little or no horizon development.

Also considered are local information about the extent and levels of flooding and the relation of each soil on the landscape to historic floods. Information on the extent of flooding based on soil data is less specific than that provided by detailed engineering surveys that delineate flood-prone areas at specific flood frequency levels.

Water table refers to a saturated zone in the soil. Table 21 indicates the depth to the top (*upper limit*) and base (*lower limit*) of the saturated zone for the specified *months* in most years. Estimates of the upper and lower limits are based mainly on observations of the water table at selected sites and on evidence of a saturated zone, namely grayish colors or mottles (redoximorphic features) in the soil. A saturated zone that lasts for less than a month is not considered a water table.

The table also shows the *kind of water table*, that is, apparent or perched. An *apparent* water table is a thick zone of free water in the soil. It is indicated by the level at which water stands in an uncased borehole after adequate time is allowed for adjustment in the surrounding soil. A *perched* water table is water standing above an unsaturated zone. In places an upper, or perched, water table is separated from a lower one by a dry zone.

Soil Features

Table 22 gives estimates of various soil features. The estimates are used in land use planning that involves engineering considerations.

A *restrictive layer* is a nearly continuous layer that has one or more physical, chemical, or thermal properties that significantly impede the movement of water and air through the soil or that restrict roots or otherwise provide an unfavorable root environment. Examples are bedrock, cemented layers, dense layers, and frozen layers. The table indicates the hardness of the restrictive layer, which significantly affects the ease of excavation. *Depth to top* is the vertical distance from the soil surface to the upper boundary of the restrictive layer.

Potential for frost action is the likelihood of upward or lateral expansion of the soil caused by the formation of segregated ice lenses (frost heave) and the subsequent collapse of the soil and loss of strength on thawing. Frost action occurs when moisture moves into the freezing zone of the soil. Temperature, texture, density, permeability, content of organic matter, and depth to the water table are the most important factors considered in evaluating the potential for frost action. It is assumed that the soil is not insulated by vegetation or snow and is not artificially drained. Silty and highly structured, clayey soils that have a high water table in winter are the most susceptible to frost action. Well drained, very gravelly, or very sandy soils are the least susceptible. Frost heave and low soil strength during thawing cause damage to pavements and other rigid structures.

Risk of corrosion pertains to potential soil-induced electrochemical or chemical action that corrodes or weakens uncoated steel or concrete. The rate of corrosion of uncoated steel is related to such factors as soil moisture, particle-size distribution, acidity, and electrical conductivity of the soil. The rate of corrosion of concrete is based mainly on the sulfate and sodium content, texture, moisture content, and acidity of the soil. Special site examination and design may be needed if the combination of factors results in a severe hazard of corrosion. The steel or concrete in installations that intersect soil boundaries or soil layers is more susceptible to corrosion than the steel or concrete in installations that are entirely within one kind of soil or within one soil layer.

For uncoated steel, the risk of corrosion, expressed as *low, moderate,* or *high,* is based on soil drainage class, total acidity, electrical resistivity near field capacity, and electrical conductivity of the saturation extract.

For concrete, the risk of corrosion also is expressed as *low, moderate,* or *high*. It is based on soil texture, acidity, and amount of sulfates in the saturation extract.

Engineering Index Test Data

Table 23 shows laboratory test data for several pedons sampled at carefully selected sites in the survey area. The pedons are representative of the series described in the section “Soil Series and Detailed Soil Map Units.” The soil samples were tested by the Illinois Department of Transportation, Springfield, Illinois.

The testing methods generally are those of the American Association of State Highway and Transportation Officials (AASHTO) or the American Society for Testing and Materials (ASTM).

The tests and methods are AASHTO classification—M 145 (AASHTO), D 3282 (ASTM); Unified classification—D 2487-00 (ASTM); Mechanical analysis—T 88 (AASHTO), D 422 (ASTM), D 2217 (ASTM); Liquid limit—T 89 (AASHTO), D 4318 (ASTM); Plasticity index—T 90 (AASHTO), D 4318 (ASTM); and Moisture density—T 99 (AASHTO), D 698 (ASTM).

References

Anonymous. 1882. History of De Witt County, Illinois.

American Association of State Highway and Transportation Officials (AASHTO). 2004. Standard specifications for transportation materials and methods of sampling and testing. 24th edition.

American Society for Testing and Materials (ASTM). 2005. Standard classification of soils for engineering purposes. ASTM Standard D2487-00.

Brady, Nyle C. 1984. The nature and properties of soils. 9th edition. Cornell University and U.S. Agency for International Development.

City of Clinton, Illinois. Accessed June 14, 2006. [http://clintonillinois.com/economic_development/edc.html]

Clinton and De Witt County History Book Committee. 1985. Clinton and De Witt County, Illinois, 1835-1985.

Cowardin, L.M., V. Carter, F.C. Golet, and E.T. LaRoe. 1979. Classification of wetlands and deep-water habitats of the United States. U.S. Fish and Wildlife Service FWS/OBS-79/31.

Federal Register. July 13, 1994. Changes in hydric soils of the United States.

Federal Register. September 18, 2002. Hydric soils of the United States.

Hansel, A.K., and W.H. Johnson. 1996. Wedron and Mason Groups: Lithostratigraphic reclassification of deposits of the Wisconsin Episode, Lake Michigan Lobe area. Department of Natural Resources, Illinois State Geological Survey. Bulletin 104.

Hunt, C.S., and J.P. Kempton. 1977. Geology for planning in De Witt County, Illinois. Illinois State Geological Survey, Environmental Geology Note 83.

Hurt, G.W., and L.M. Vasilas, editors. Version 6.0, 2006. Field indicators of hydric soils in the United States.

Illinois Agricultural Statistics Service. Accessed June 30, 2006. [http://www.agstats.state.il.us/website/agstats.htm]

Illinois Department of Agriculture. Accessed June 15, 2006. [http://www.agr.state.il.us/gis/stats/landcover/counties/county.php?CNTY=DeWitt]

Illinois Department of Natural Resources. Accessed May 17, 2006. [http://www.dnr.state.il.us/lands/Landmgt/PARKS/R3/region3.htm]

Illinois Environmental Protection Agency. Accessed May 18, 2006. [http://www.epa.state.il.us/cgi-bin/wp/swap-fact-sheets.pl]

Iverson, L.R., R.L. Oliver, D.P. Tucker, P.G. Risser, C.D. Burnett, and R.G. Rayburn. 1989. The forest resources of Illinois: An atlas and analysis of spatial and temporal attributes. Illinois Natural History Survey, Special Publication 11.

Jenny, Hans. 1941. Factors of soil formation.

Leighton, M.M., G.E. Ekblaw, and L. Horberg. 1948. Physiographic divisions of Illinois. Illinois State Geological Survey, Report of Investigations 129.

Lineback, J.A., and others. 1979. Quaternary deposits of Illinois. Illinois State Geological Survey. Map 1:500,000.

National Research Council. 1995. Wetlands: Characteristics and boundaries.

Olson, K.R., and J.M. Lang. 2000. Optimum crop productivity ratings for Illinois soils. University of Illinois, College of Agricultural, Consumer and Environmental Sciences. Bulletin 811.

Olson, K.R., J.M. Lang, J.D. Garcia-Paredes, R.N. Majchrzak, C.I. Hadley, M.E. Woolery, and R.M. Rejesus. 2000. Average crop, pasture, and forestry productivity ratings for Illinois soils. University of Illinois, College of Agricultural, Consumer and Environmental Sciences. Bulletin 810.

Piskin, K., and R.E. Bergstrom. 1975. Glacial drift in Illinois: Thickness and character. Illinois State Geological Survey Circular 490.

Soil Survey Division Staff. 1993. Soil survey manual. Soil Conservation Service. U.S. Department of Agriculture Handbook 18. [http://soils.usda.gov/technical/]

Soil Survey Staff. 1999. Soil taxonomy: A basic system of soil classification for making and interpreting soil surveys. 2nd edition. Natural Resources Conservation Service. U.S. Department of Agriculture Handbook 436.

Soil Survey Staff. 2003. Keys to soil taxonomy. 9th edition. U.S. Department of Agriculture, Natural Resources Conservation Service.

Soil Survey Staff. 2006. Keys to soil taxonomy. 10th edition. U.S. Department of Agriculture, Natural Resources Conservation Service.

Tiner, R.W., Jr. 1985. Wetlands of Delaware. U.S. Fish and Wildlife Service and Delaware Department of Natural Resources and Environmental Control, Wetlands Section.

United States Army Corps of Engineers, Environmental Laboratory. 1987. Corps of Engineers wetlands delineation manual. Waterways Experiment Station Technical Report Y-87-1.

United States Department of Agriculture. 1961. Land capability classification. Soil Conservation Service. U.S. Department of Agriculture Handbook 210.

United States Department of Agriculture, National Agricultural Statistics Service. Accessed May 17, 2006. [http://www.nass.usda.gov/index.asp]

United States Department of Agriculture, Natural Resources Conservation Service. National forestry manual. [http://soils.usda.gov/technical/]

United States Department of Agriculture, Natural Resources Conservation Service. National soil survey handbook, title 430-VI. [http://soils.usda.gov/technical/]

United States Department of Agriculture, Natural Resources Conservation Service. 2006. Land resource regions and major land resource areas of the United States, the Caribbean, and the Pacific Basin. U.S. Department of Agriculture Handbook 296. [http://soils.usda.gov/]

United States Department of Commerce, Bureau of the Census. Accessed May 15, 2006. [http://www.census.gov/main/www/cen2000.html]

Willman, H.B., E. Atherton, T.C. Buschbach, C. Collinson, J.C. Frye, M.E. Hopkins, and J.A. Simon. 1975. Handbook of Illinois stratigraphy. Illinois State Geological Survey Bulletin 95.

Willman, H.B., and J.C. Frye. 1970. Pleistocene stratigraphy of Illinois. Illinois Geological Survey Bulletin 94.

Windhorn, R.D. 1991. Soil survey of De Witt County, Illinois. U.S. Department of Agriculture, Soil Conservation Service. Illinois Agricultural Experiment Station Soil Report 137.

Glossary

Many of the terms relating to landforms, geology, and geomorphology are defined in more detail in the “National Soil Survey Handbook” (available in local offices of the Natural Resources Conservation Service or on the Internet).

ABC soil. A soil having an A, a B, and a C horizon.

Ablation till. Loose, relatively permeable earthy material deposited during the downwasting of nearly static glacial ice, either contained within or accumulated on the surface of the glacier.

AC soil. A soil having only an A and a C horizon. Commonly, such soil formed in recent alluvium or on steep, rocky slopes.

Aeration, soil. The exchange of air in soil with air from the atmosphere. The air in a well aerated soil is similar to that in the atmosphere; the air in a poorly aerated soil is considerably higher in carbon dioxide and lower in oxygen.

Aggregate, soil. Many fine particles held in a single mass or cluster. Natural soil aggregates, such as granules, blocks, or prisms, are called peds. Clods are aggregates produced by tillage or logging.

Alluvium. Unconsolidated material, such as gravel, sand, silt, clay, and various mixtures of these, deposited on land by running water.

Alpha,alpha-dipyridyl. A compound that when dissolved in ammonium acetate is used to detect the presence of reduced iron (Fe II) in the soil. A positive reaction implies reducing conditions and the likely presence of redoximorphic features.

Animal unit month (AUM). The amount of forage required by one mature cow of approximately 1,000 pounds weight, with or without a calf, for 1 month.

Aquic conditions. Current soil wetness characterized by saturation, reduction, and redoximorphic features.

Argillic horizon. A subsoil horizon characterized by an accumulation of illuvial clay.

Aspect. The direction toward which a slope faces. Also called slope aspect.

Available water capacity (available moisture capacity). The capacity of soils to hold water available for use by most plants. It is commonly defined as the difference between the amount of soil water at field moisture capacity and the amount at wilting point. It is commonly expressed as inches of water per inch of soil. The capacity, in inches, in a 60-inch profile or to a limiting layer is expressed as:

Very low	0 to 3
Low	3 to 6
Moderate	6 to 9
High	9 to 12
Very high	more than 12

Backslope. The position that forms the steepest and generally linear, middle portion of a hillslope. In profile, backslopes are commonly bounded by a convex shoulder above and a concave footslope below.

Backswamp. A flood-plain landform. Extensive, marshy or swampy, depressed areas of flood plains between natural levees and valley sides or terraces.

Basal area. The area of a cross section of a tree, generally referring to the section at breast height and measured outside the bark. It is a measure of stand density, commonly expressed in square feet.

Base saturation. The degree to which material having cation-exchange properties is saturated with exchangeable bases (sum of Ca, Mg, Na, and K), expressed as a percentage of the total cation-exchange capacity.

Base slope (geomorphology). A geomorphic component of hills consisting of the concave to linear (perpendicular to the contour) slope that, regardless of the lateral shape, forms an apron or wedge at the bottom of a hillside dominated by colluvium and slope-wash sediments (for example, slope alluvium).

Batavia facies (geology). An informal separation of the Henry Formation. The Batavia facies occurs on outwash plains and consists of stratified silt loam to gravelly sandy loam with thin bands of finer or coarser material.

Bedding plane. A planar or nearly planar bedding surface that visibly separates each successive layer of stratified sediment or rock (of the same or different lithology) from the preceding or following layer; a plane of deposition. It commonly marks a change in the circumstances of deposition and may show a parting, a color difference, a change in particle size, or various combinations of these. The term is commonly applied to any bedding surface, even one that is conspicuously bent or deformed by folding.

Bedding system. A drainage system made by plowing, grading, or otherwise shaping the surface of a flat field. It consists of a series of low ridges separated by shallow, parallel dead furrows.

Bedrock. The solid rock that underlies the soil and other unconsolidated material or that is exposed at the surface.

Bedrock-controlled topography. A landscape where the configuration and relief of the landforms are determined or strongly influenced by the underlying bedrock.

Bench terrace. A raised, level or nearly level strip of earth constructed on or nearly on a contour, supported by a barrier of rocks or similar material, and designed to make the soil suitable for tillage and to prevent accelerated erosion.

Bisequum. Two sequences of soil horizons, each of which consists of an illuvial horizon and the overlying eluvial horizons.

Bottom land. An informal term loosely applied to various portions of a flood plain.

Boulders. Rock fragments larger than 2 feet (60 centimeters) in diameter.

Breaks. A landscape or tract of steep, rough or broken land dissected by ravines and gullies and marking a sudden change in topography.

Breast height. An average height of 4.5 feet above the ground surface; the point on a tree where diameter measurements are ordinarily taken.

Brush management. Use of mechanical, chemical, or biological methods to make conditions favorable for reseeding or to reduce or eliminate competition from woody vegetation and thus allow understory grasses and forbs to recover. Brush management increases forage production and thus reduces the hazard of erosion. It can improve the habitat for some species of wildlife.

Cable yarding. A method of moving felled trees to a nearby central area for transport to a processing facility. Most cable yarding systems involve use of a drum, a pole, and wire cables in an arrangement similar to that of a rod and reel used for fishing. To reduce friction and soil disturbance, felled trees generally are reeled in while one end is lifted or the entire log is suspended.

Cahokia Formation (geology). Deposits on flood plains and in channels of modern rivers and streams. Mostly poorly sorted sand, silt, or clay containing local deposits of sandy gravel. (See Quaternary.)

Calcareous soil. A soil containing enough calcium carbonate (commonly combined with magnesium carbonate) to effervesce visibly when treated with cold, dilute hydrochloric acid.

Canopy. The leafy crown of trees or shrubs. (See Crown.)
Capillary water. Water held as a film around soil particles and in tiny spaces between particles. Surface tension is the adhesive force that holds capillary water in the soil.
Catena. A sequence, or "chain," of soils on a landscape that formed in similar kinds of parent material and under similar climatic conditions but that have different characteristics as a result of differences in relief and drainage.
Cation. An ion carrying a positive charge of electricity. The common soil cations are calcium, potassium, magnesium, sodium, and hydrogen.
Cation-exchange capacity. The total amount of exchangeable cations that can be held by the soil, expressed in terms of milliequivalents per 100 grams of soil at neutrality (pH 7.0) or at some other stated pH value. The term, as applied to soils, is synonymous with base-exchange capacity but is more precise in meaning.
Catsteps. See Terracettes.
Cement rock. Shaly limestone used in the manufacture of cement.
Channery soil material. Soil material that has, by volume, 15 to 35 percent thin, flat fragments of sandstone, shale, slate, limestone, or schist as much as 6 inches (15 centimeters) along the longest axis. A single piece is called a channer.
Chemical treatment. Control of unwanted vegetation through the use of chemicals.
Chiseling. Tillage with an implement having one or more soil-penetrating points that shatter or loosen hard, compacted layers to a depth below normal plow depth.
Clay. As a soil separate, the mineral soil particles less than 0.002 millimeter in diameter. As a soil textural class, soil material that is 40 percent or more clay, less than 45 percent sand, and less than 40 percent silt.
Clay depletions. See Redoximorphic features.
Clay film. A thin coating of oriented clay on the surface of a soil aggregate or lining pores or root channels. Synonyms: clay coating, clay skin.
Claypan. A dense, compact, slowly permeable subsoil layer that contains much more clay than the overlying materials, from which it is separated by a sharply defined boundary. A claypan is commonly hard when dry and plastic and sticky when wet.
Climax plant community. The stabilized plant community on a particular site. The plant cover reproduces itself and does not change so long as the environment remains the same.
Coarse textured soil. Sand or loamy sand.
Cobble (or cobblestone). A rounded or partly rounded fragment of rock 3 to 10 inches (7.6 to 25 centimeters) in diameter.
Cobbly soil material. Material that has 15 to 35 percent, by volume, rounded or partially rounded rock fragments 3 to 10 inches (7.6 to 25 centimeters) in diameter. Very cobbly soil material has 35 to 60 percent of these rock fragments, and extremely cobbly soil material has more than 60 percent.
COLE (coefficient of linear extensibility). See Linear extensibility.
Colluvium. Unconsolidated, unsorted earth material being transported or deposited on side slopes and/or at the base of slopes by mass movement (e.g., direct gravitational action) and by local, unconcentrated runoff.
Complex slope. Irregular or variable slope. Planning or establishing terraces, diversions, and other water-control structures on a complex slope is difficult.
Complex, soil. A map unit of two or more kinds of soil or miscellaneous areas in such an intricate pattern or so small in area that it is not practical to map them separately at the selected scale of mapping. The pattern and proportion of the soils or miscellaneous areas are somewhat similar in all areas.
Concretions. See Redoximorphic features.
Conglomerate. A coarse grained, clastic sedimentary rock composed of rounded or subangular rock fragments more than 2 millimeters in diameter. It commonly has a

matrix of sand and finer textured material. Conglomerate is the consolidated equivalent of gravel.

Conservation cropping system. Growing crops in combination with needed cultural and management practices. In a good conservation cropping system, the soil-improving crops and practices more than offset the effects of the soil-depleting crops and practices. Cropping systems are needed on all tilled soils. Soil-improving practices in a conservation cropping system include the use of rotations that contain grasses and legumes and the return of crop residue to the soil. Other practices include the use of green manure crops of grasses and legumes, proper tillage, adequate fertilization, and weed and pest control.

Conservation tillage. A tillage system that does not invert the soil and that leaves a protective amount of crop residue on the surface throughout the year.

Consistence, soil. Refers to the degree of cohesion and adhesion of soil material and its resistance to deformation when ruptured. Consistence includes resistance of soil material to rupture and to penetration; plasticity, toughness, and stickiness of puddled soil material; and the manner in which the soil material behaves when subject to compression. Terms describing consistence are defined in the "Soil Survey Manual."

Contour stripcropping. Growing crops in strips that follow the contour. Strips of grass or close-growing crops are alternated with strips of clean-tilled crops or summer fallow.

Control section. The part of the soil on which classification is based. The thickness varies among different kinds of soil, but for many it is that part of the soil profile between depths of 10 inches and 40 or 80 inches.

Coprogenous earth (sedimentary peat). A type of limnic layer composed predominantly of fecal material derived from aquatic animals.

Corrosion (geomorphology). A process of erosion whereby rocks and soil are removed or worn away by natural chemical processes, especially by the solvent action of running water, but also by other reactions, such as hydrolysis, hydration, carbonation, and oxidation.

Corrosion (soil survey interpretations). Soil-induced electrochemical or chemical action that dissolves or weakens concrete or uncoated steel.

Cover crop. A close-growing crop grown primarily to improve and protect the soil between periods of regular crop production, or a crop grown between trees and vines in orchards and vineyards.

Crop residue management. Returning crop residue to the soil, which helps to maintain soil structure, organic matter content, and fertility and helps to control erosion.

Cropping system. Growing crops according to a planned system of rotation and management practices.

Cross-slope farming. Deliberately conducting farming operations on sloping farmland in such a way that tillage is across the general slope.

Crown. The upper part of a tree or shrub, including the living branches and their foliage.

Culmination of the mean annual increment (CMAI). The average annual increase per acre in the volume of a stand. Computed by dividing the total volume of the stand by its age. As the stand increases in age, the mean annual increment continues to increase until mortality begins to reduce the rate of increase. The point where the stand reaches its maximum annual rate of growth is called the culmination of the mean annual increment.

Cutbanks cave (in tables). The walls of excavations tend to cave in or slough.

Decreasers. The most heavily grazed climax range plants. Because they are the most palatable, they are the first to be destroyed by overgrazing.

Deferred grazing. Postponing grazing or resting grazing land for a prescribed period.

Delavan Member (geology). The lower part of the Tiskilwa Formation deposited between 26,000 and 18,500 radiocarbon years ago. Consists of calcareous, brownish gray to pink or violet gray loam diamicton. Reclassified to include the former Fairgrange Till Member.

Dense layer (in tables). A very firm, massive layer that has a bulk density of more than 1.8 grams per cubic centimeter. Such a layer affects the ease of digging and can affect filling and compacting.

Depth, soil. Generally, the thickness of the soil over bedrock. Very deep soils are more than 60 inches deep over bedrock; deep soils, 40 to 60 inches; moderately deep, 20 to 40 inches; shallow, 10 to 20 inches; and very shallow, less than 10 inches.

Diamicton. A generic term for a till-like mixture of unsorted, unstratified rock debris composed of a wide range of particle sizes. Use of this term carries no suggestion about how such debris was formed or deposited.

Diatomaceous earth. A geologic deposit of fine, grayish siliceous material composed chiefly or entirely of the remains of diatoms.

Dip slope. A slope of the land surface, roughly determined by and approximately conforming to the dip of the underlying bedrock.

Diversion (or diversion terrace). A ridge of earth, generally a terrace, built to protect downslope areas by diverting runoff from its natural course.

Divided-slope farming. A form of field stripcropping in which crops are grown in a systematic arrangement of two strips, or bands, across the slope to reduce the hazard of water erosion. One strip is in a close-growing crop that provides protection from erosion, and the other strip is in a crop that provides less protection from erosion. This practice is used where slopes are not long enough to permit a full stripcropping pattern to be used.

Drainage class (natural). Refers to the frequency and duration of wet periods under conditions similar to those under which the soil formed. Alterations of the water regime by human activities, either through drainage or irrigation, are not a consideration unless they have significantly changed the morphology of the soil. Seven classes of natural soil drainage are recognized—*excessively drained, somewhat excessively drained, well drained, moderately well drained, somewhat poorly drained, poorly drained,* and *very poorly drained*. These classes are defined in the “Soil Survey Manual.”

Drainage, surface. Runoff, or surface flow of water, from an area.

Drainageway. A general term for a course or channel along which water moves in draining an area. A term restricted to relatively small, linear depressions that at some time move concentrated water and either do not have a defined channel or have only a small defined channel.

Draw. A small stream valley that generally is shallower and more open than a ravine or gulch and that has a broader bottom. The present stream channel may appear inadequate to have cut the drainageway that it occupies.

Drift. A general term applied to all mineral material (clay, silt, sand, gravel, and boulders) transported by a glacier and deposited directly by or from the ice or transported by running water emanating from a glacier. Drift includes unstratified material (till) that forms moraines and stratified deposits that form outwash plains, eskers, kames, varves, and glaciofluvial sediments. The term is generally applied to Pleistocene glacial deposits in areas that no longer contain glaciers.

Drumlin. A low, smooth, elongated oval hill, mound, or ridge of compact till that has a core of bedrock or drift. It commonly has a blunt nose facing the direction from which the ice approached and a gentler slope tapering in the other direction. The longer axis is parallel to the general direction of glacier flow. Drumlins are products of streamline (laminar) flow of glaciers, which molded the subglacial floor through a combination of erosion and deposition.

Duff. A generally firm organic layer on the surface of mineral soils. It consists of fallen plant material that is in the process of decomposition and includes everything from the litter on the surface to underlying pure humus.

Dune. A low mound, ridge, bank, or hill of loose, windblown granular material (generally sand), either barren and capable of movement from place to place or covered and stabilized with vegetation but retaining its characteristic shape.

Earthy fill. See Mine spoil.

Ecological site. An area where climate, soil, and relief are sufficiently uniform to produce a distinct natural plant community. An ecological site is the product of all the environmental factors responsible for its development. It is typified by an association of species that differ from those on other ecological sites in kind and/or proportion of species or in total production.

Eluviation. The movement of material in true solution or colloidal suspension from one place to another within the soil. Soil horizons that have lost material through eluviation are eluvial; those that have received material are illuvial.

End moraine. A ridgelike accumulation that is being or was produced at the outer margin of an actively flowing glacier at any given time.

Endosaturation. A type of saturation of the soil in which all horizons between the upper boundary of saturation and a depth of 2 meters are saturated.

Eolian deposit. Sand-, silt-, or clay-sized clastic material transported and deposited primarily by wind, commonly in the form of a dune or a sheet of sand or loess.

Ephemeral stream. A stream, or reach of a stream, that flows only in direct response to precipitation. It receives no long-continued supply from melting snow or other source, and its channel is above the water table at all times.

Episaturation. A type of saturation indicating a perched water table in a soil in which saturated layers are underlain by one or more unsaturated layers within 2 meters of the surface.

Erosion. The wearing away of the land surface by water, wind, ice, or other geologic agents and by such processes as gravitational creep.

Erosion (geologic). Erosion caused by geologic processes acting over long geologic periods and resulting in the wearing away of mountains and the building up of such landscape features as flood plains and coastal plains. Synonym: natural erosion.

Erosion (accelerated). Erosion much more rapid than geologic erosion, mainly as a result of human or animal activities or of a catastrophe in nature, such as a fire, that exposes the surface.

Erosion pavement. A surficial lag concentration or layer of gravel and other rock fragments that remains on the soil surface after sheet or rill erosion or wind has removed the finer soil particles and that tends to protect the underlying soil from further erosion.

Erosion surface. A land surface shaped by the action of erosion, especially by running water.

Escarpment. A relatively continuous and steep slope or cliff breaking the general continuity of more gently sloping land surfaces and resulting from erosion or faulting. Most commonly applied to cliffs produced by differential erosion. Synonym: scarp.

Esker. A long, narrow, sinuous, steep-sided ridge of stratified sand and gravel deposited as the bed of a stream flowing in an ice tunnel within or below the ice (subglacial) or between ice walls on top of the ice of a wasting glacier and left behind as high ground when the ice melted. Eskers range in length from less than a kilometer to more than 160 kilometers and in height from 3 to 30 meters.

Extrusive rock. Igneous rock derived from deep-seated molten matter (magma) deposited and cooled on the earth's surface.

Fairgrange Till Member (geology). Abandoned nomenclature. Pink, reddish brown, and brownish gray sandy till in east-central Illinois. (See Delavan Member.)

Fallow. Cropland left idle in order to restore productivity through accumulation of moisture. Summer fallow is common in regions of limited rainfall where cereal grain is grown. The soil is tilled for at least one growing season for weed control and decomposition of plant residue.

Fertility, soil. The quality that enables a soil to provide plant nutrients, in adequate amounts and in proper balance, for the growth of specified plants when light, moisture, temperature, tilth, and other growth factors are favorable.

Fibric soil material (peat). The least decomposed of all organic soil material. Peat contains a large amount of well preserved fiber that is readily identifiable according to botanical origin. Peat has the lowest bulk density and the highest water content at saturation of all organic soil material.

Field moisture capacity. The moisture content of a soil, expressed as a percentage of the ovendry weight, after the gravitational, or free, water has drained away; the field moisture content 2 or 3 days after a soaking rain; also called *normal field capacity, normal moisture capacity,* or *capillary capacity*.

Fill slope. A sloping surface consisting of excavated soil material from a road cut. It commonly is on the downhill side of the road.

Fine textured soil. Sandy clay, silty clay, or clay.

Firebreak. An area cleared of flammable material to stop or help control creeping or running fires. It also serves as a line from which to work and to facilitate the movement of firefighters and equipment. Designated roads also serve as firebreaks.

First bottom. An obsolete, informal term loosely applied to the lowest flood-plain steps that are subject to regular flooding.

Flaggy soil material. Material that has, by volume, 15 to 35 percent flagstones. Very flaggy soil material has 35 to 60 percent flagstones, and extremely flaggy soil material has more than 60 percent flagstones.

Flagstone. A thin fragment of sandstone, limestone, slate, shale, or (rarely) schist 6 to 15 inches (15 to 38 centimeters) long.

Flood plain. The nearly level plain that borders a stream and is subject to flooding unless protected artificially.

Flood-plain landforms. A variety of constructional and erosional features produced by stream channel migration and flooding. Examples include backswamps, flood-plain splays, meanders, meander belts, meander scrolls, oxbow lakes, and natural levees.

Flood-plain splay. A fan-shaped deposit or other outspread deposit formed where an overloaded stream breaks through a levee (natural or artificial) and deposits its material (commonly coarse grained) on the flood plain.

Flood-plain step. An essentially flat, terrace-like alluvial surface within a valley that is frequently covered by floodwater from the present stream; any approximately horizontal surface still actively modified by fluvial scour and/or deposition. May occur individually or as a series of steps.

Fluvial. Of or pertaining to rivers or streams; produced by stream or river action.

Foothills. A region of steeply sloping hills that fringes a mountain range or high-plateau escarpment. The hills have relief of as much as 1,000 feet (300 meters).

Footslope. The concave surface at the base of a hillslope. A footslope is a transition zone between upslope sites of erosion and transport (shoulders and backslopes) and downslope sites of deposition (toeslopes).

Forb. Any herbaceous plant not a grass or a sedge.

Forest cover. All trees and other woody plants (underbrush) covering the ground in a forest.

Forest type. A stand of trees similar in composition and development because of given physical and biological factors by which it may be differentiated from other stands.

Fragipan. A loamy, brittle subsurface horizon low in porosity and content of organic matter and low or moderate in clay but high in silt or very fine sand. A fragipan appears cemented and restricts roots. When dry, it is hard or very hard and has a higher bulk density than the horizon or horizons above. When moist, it tends to rupture suddenly under pressure rather than to deform slowly.

Genesis, soil. The mode of origin of the soil. Refers especially to the processes or soil-forming factors responsible for the formation of the solum, or true soil, from the unconsolidated parent material.

Geosol. A buried soil that formed on a landscape in the past with distinctive morphological features resulting from a soil-forming environment that no longer exists at the site. The former pedogenic process was interrupted by burial. A geosol is a laterally traceable, mappable, geologic weathering profile that has a consistent stratigraphic position. (See Paleosol.)

Glacial (geology). This term embraces both the processes and results of erosion and deposition arising from the presence of an ice mass (glacier) on a landscape.

Glacial lake (relict). An area formerly occupied by a glacial lake. (See Glaciolacustrine deposits.)

Glaciofluvial deposits. Material moved by glaciers and subsequently sorted and deposited by streams flowing from the melting ice. The deposits are stratified and occur in the form of outwash plains, valley trains, deltas, kames, eskers, and kame terraces.

Glaciolacustrine deposits. Material ranging from fine clay to sand derived from glaciers and deposited in glacial lakes mainly by glacial meltwater. Many deposits are bedded or laminated.

Glasford Formation (geology). Encompasses all till members of Illinoian age in Illinois.

Gleyed soil. Soil that formed under poor drainage, resulting in the reduction of iron and other elements in the profile and in gray colors.

Graded stripcropping. Growing crops in strips that grade toward a protected waterway.

Grassed waterway. A natural or constructed waterway, typically broad and shallow, seeded to grass as protection against erosion. Conducts surface water away from cropland.

Gravel. Rounded or angular fragments of rock as much as 3 inches (2 millimeters to 7.6 centimeters) in diameter. An individual piece is a pebble.

Gravelly soil material. Material that has 15 to 35 percent, by volume, rounded or angular rock fragments, not prominently flattened, as much as 3 inches (7.6 centimeters) in diameter.

Green manure crop (agronomy). A soil-improving crop grown to be plowed under in an early stage of maturity or soon after maturity.

Ground moraine. An extensive, fairly even layer of till having an uneven or undulating surface.

Ground water. Water filling all the unblocked pores of the material below the water table.

Gully. A small channel with steep sides caused by erosion and cut in unconsolidated materials by concentrated but intermittent flow of water. The distinction between a gully and a rill is one of depth. A gully generally is an obstacle to farm machinery and is too deep to be obliterated by ordinary tillage; a rill is of lesser depth and can be smoothed over by ordinary tillage.

Hard bedrock. Bedrock that cannot be excavated except by blasting or by the use of special equipment that is not commonly used in construction.

Hard to reclaim (in tables). Reclamation is difficult after the removal of soil for construction and other uses. Revegetation and erosion control are extremely difficult.

Hardpan. A hardened or cemented soil horizon, or layer. The soil material is sandy, loamy, or clayey and is cemented by iron oxide, silica, calcium carbonate, or other substance.

Head slope (geomorphology). A geomorphic component of hills consisting of a laterally concave area of a hillside, especially at the head of a drainageway. The overland waterflow is converging.

Hemic soil material (mucky peat). Organic soil material intermediate in degree of decomposition between the less decomposed fibric material and the more decomposed sapric material.

Henry Formation (geology). Consists of stratified sand and gravel that occur above the Sangamon Geosol.

High-residue crops. Such crops as small grain and corn used for grain. If properly managed, residue from these crops can be used to control erosion until the next crop in the rotation is established. These crops return large amounts of organic matter to the soil.

Hill. A generic term for an elevated area of the land surface, rising as much as 1,000 feet above surrounding lowlands, commonly of limited summit area and having a well defined outline. Slopes are generally more than 15 percent. The distinction between a hill and a mountain is arbitrary and may depend on local usage.

Hillslope. A generic term for the steeper part of a hill between its summit and the drainage line, valley flat, or depression floor at the base of a hill.

Holocene (geology). Postglacial age or time period (interglacial). About 0 to 12,600 years before present. (See Quaternary.)

Horizon, soil. A layer of soil, approximately parallel to the surface, having distinct characteristics produced by soil-forming processes. In the identification of soil horizons, an uppercase letter represents the major horizons. Numbers or lowercase letters that follow represent subdivisions of the major horizons. An explanation of the subdivisions is given in the "Soil Survey Manual." The major horizons of mineral soil are as follows:

O horizon.—An organic layer of fresh and decaying plant residue.

L horizon.—A layer of organic and mineral limnic materials, including coprogenous earth (sedimentary peat), diatomaceous earth, and marl.

A horizon.—The mineral horizon at or near the surface in which an accumulation of humified organic matter is mixed with the mineral material. Also, a plowed surface horizon, most of which was originally part of a B horizon.

E horizon.—The mineral horizon in which the main feature is loss of silicate clay, iron, aluminum, or some combination of these.

B horizon.—The mineral horizon below an A horizon. The B horizon is in part a layer of transition from the overlying A to the underlying C horizon. The B horizon also has distinctive characteristics, such as (1) accumulation of clay, sesquioxides, humus, or a combination of these; (2) prismatic or blocky structure; (3) redder or browner colors than those in the A horizon; or (4) a combination of these.

C horizon.—The mineral horizon or layer, excluding indurated bedrock, that is little affected by soil-forming processes and does not have the properties typical of the overlying soil material. The material of a C horizon may be either like or unlike that in which the solum formed. If the material is known to differ from that in the solum, an Arabic numeral, commonly a 2, precedes the letter C.

Cr horizon.—Soft, consolidated bedrock beneath the soil.

R layer.—Consolidated bedrock beneath the soil. The bedrock commonly underlies a C horizon, but it can be directly below an A or a B horizon.

Humus. The well decomposed, more or less stable part of the organic matter in mineral soils.

Hydrologic soil groups. Refers to soils grouped according to their runoff potential. The soil properties that influence this potential are those that affect the minimum rate of water infiltration on a bare soil during periods after prolonged wetting when the soil is not frozen. These properties are depth to a seasonal high water table, the infiltration rate and permeability after prolonged wetting, and depth to a very slowly permeable layer. The slope and the kind of plant cover are not considered but are separate factors in predicting runoff.

Igneous rock. Rock that was formed by cooling and solidification of magma and that has not been changed appreciably by weathering since its formation. Major varieties include plutonic and volcanic rock (e.g., andesite, basalt, and granite).

Illinoian (geology). In Illinois, represents the glacial age of ice advance preceding the Sangamonian and Wisconsinan and following the Yarmouthian and pre-Illinoian during the Pleistocene. This glaciation covered practically the entire State of Illinois with the exception of small portions in northwestern, western, and southern Illinois. (See Pleistocene.)

Illuviation. The movement of soil material from one horizon to another in the soil profile. Generally, material is removed from an upper horizon and deposited in a lower horizon.

Impervious soil. A soil through which water, air, or roots penetrate slowly or not at all. No soil is absolutely impervious to air and water all the time.

Increasers. Species in the climax vegetation that increase in amount as the more desirable plants are reduced by close grazing. Increasers commonly are the shorter plants and the less palatable to livestock.

Infiltration. The downward entry of water into the immediate surface of soil or other material, as contrasted with percolation, which is movement of water through soil layers or material.

Infiltration capacity. The maximum rate at which water can infiltrate into a soil under a given set of conditions.

Infiltration rate. The rate at which water penetrates the surface of the soil at any given instant, usually expressed in inches per hour. The rate can be limited by the infiltration capacity of the soil or the rate at which water is applied at the surface.

Intake rate. The average rate of water entering the soil under irrigation. Most soils have a fast initial rate; the rate decreases with application time. Therefore, intake rate for design purposes is not a constant but is a variable depending on the net irrigation application. The rate of water intake, in inches per hour, is expressed as follows:

Less than 0.2	very low
0.2 to 0.4	low
0.4 to 0.75	moderately low
0.75 to 1.25	moderate
1.25 to 1.75	moderately high
1.75 to 2.5	high
More than 2.5	very high

Interfluve. A landform composed of the relatively undissected upland or ridge between two adjacent valleys containing streams flowing in the same general direction. An elevated area between two drainageways that sheds water to those drainageways.

Interfluve (geomorphology). A geomorphic component of hills consisting of the uppermost, comparatively level or gently sloping area of a hill; shoulders of

backwearing hillslopes can narrow the upland or can merge, resulting in a strongly convex shape.

Interglacial. A period of time between major glacial stages. (See Holocene, Sangamonian, and Yarmouthian.)

Intermittent stream. A stream, or reach of a stream, that does not flow year-round but that is commonly dry for 3 or more months out of 12 and whose channel is generally below the local water table. It flows only during wet periods or when it receives ground-water discharge or long, continued contributions from melting snow or other surface and shallow subsurface sources.

Invaders. On range, plants that encroach into an area and grow after the climax vegetation has been reduced by grazing. Generally, plants invade following disturbance of the surface.

Iron depletions. See Redoximorphic features.

Irrigation. Application of water to soils to assist in production of crops. Methods of irrigation are:

Basin.—Water is applied rapidly to nearly level plains surrounded by levees or dikes.

Border.—Water is applied at the upper end of a strip in which the lateral flow of water is controlled by small earth ridges called border dikes, or borders.

Controlled flooding.—Water is released at intervals from closely spaced field ditches and distributed uniformly over the field.

Corrugation.—Water is applied to small, closely spaced furrows or ditches in fields of close-growing crops or in orchards so that it flows in only one direction.

Drip (or trickle).—Water is applied slowly and under low pressure to the surface of the soil or into the soil through such applicators as emitters, porous tubing, or perforated pipe.

Furrow.—Water is applied in small ditches made by cultivation implements. Furrows are used for tree and row crops.

Sprinkler.—Water is sprayed over the soil surface through pipes or nozzles from a pressure system.

Subirrigation.—Water is applied in open ditches or tile lines until the water table is raised enough to wet the soil.

Wild flooding.—Water, released at high points, is allowed to flow onto an area without controlled distribution.

Kame. A low mound, knob, hummock, or short irregular ridge composed of stratified sand and gravel deposited by a subglacial stream as a fan or delta at the margin of a melting glacier; by a supraglacial stream in a low place or hole on the surface of the glacier; or as a ponded deposit on the surface or at the margin of stagnant ice.

Karst (topography). A kind of topography that formed in limestone, gypsum, or other soluble rocks by dissolution and that is characterized by closed depressions, sinkholes, caves, and underground drainage.

Knoll. A small, low, rounded hill rising above adjacent landforms.

Ksat. Saturated hydraulic conductivity. (See Permeability.)

Lacustrine deposit. Material deposited in lake water and exposed when the water level is lowered or the elevation of the land is raised.

Lake plain. A nearly level surface marking the floor of an extinct lake filled by well sorted, generally fine textured, stratified deposits, commonly containing varves.

Lake terrace. A narrow shelf, partly cut and partly built, produced along a lakeshore in front of a scarp line of low cliffs and later exposed when the water level falls.

Landslide. A general, encompassing term for most types of mass movement landforms and processes involving the downslope transport and outward deposition of soil and rock materials caused by gravitational forces; the movement

may or may not involve saturated materials. The speed and distance of movement, as well as the amount of soil and rock material, vary greatly.

Large stones (in tables). Rock fragments 3 inches (7.6 centimeters) or more across. Large stones adversely affect the specified use of the soil.

Leaching. The removal of soluble material from soil or other material by percolating water.

Linear extensibility. Refers to the change in length of an unconfined clod as moisture content is decreased from a moist to a dry state. Linear extensibility is used to determine the shrink-swell potential of soils. It is an expression of the volume change between the water content of the clod at $^1/_3$- or $^1/_{10}$-bar tension (33kPa or 10kPa tension) and oven dryness. Volume change is influenced by the amount and type of clay minerals in the soil. The volume change is the percent change for the whole soil. If it is expressed as a fraction, the resulting value is COLE, coefficient of linear extensibility.

Liquid limit. The moisture content at which the soil passes from a plastic to a liquid state.

Loam. Soil material that is 7 to 27 percent clay particles, 28 to 50 percent silt particles, and less than 52 percent sand particles.

Loess. Material transported and deposited by wind and consisting dominantly of silt-sized particles.

Low strength. The soil is not strong enough to support loads.

Low-residue crops. Such crops as corn used for silage, peas, beans, and potatoes. Residue from these crops is not adequate to control erosion until the next crop in the rotation is established. These crops return little organic matter to the soil.

Mackinaw facies (geology). An informal separation of the Henry Formation. The Mackinaw facies consists of well sorted sand and gravel outwash deposits in valleys leading outward from glacier fronts. Preserved today as terraces beneath Holocene deposits in major stream and river valleys.

Marl. An earthy, unconsolidated deposit consisting chiefly of calcium carbonate mixed with clay in approximately equal proportions; formed primarily under freshwater lacustrine conditions but also formed in more saline environments.

Mason Group (geology). The Mason Group comprises three proglacial and one postglacial sorted sediment formations that represent distinct stratigraphic layers based on grain size and bedding characteristics. The proglacial units are Roxana Silt, Peoria Silt, and the Henry Formation. The postglacial unit is the Equality Formation.

Mass movement. A generic term for the dislodgment and downslope transport of soil and rock material as a unit under direct gravitational stress.

Masses. See Redoximorphic features.

Meander belt. The zone within which migration of a meandering channel occurs; the flood-plain area included between two imaginary lines drawn tangential to the outer bends of active channel loops.

Meander scar. A crescent-shaped, concave or linear mark on the face of a bluff or valley wall, produced by the lateral erosion of a meandering stream that impinged upon and undercut the bluff.

Meander scroll. One of a series of long, parallel, close-fitting, crescent-shaped ridges and troughs formed along the inner bank of a stream meander as the channel migrated laterally down-valley and toward the outer bank.

Mechanical treatment. Use of mechanical equipment for seeding, brush management, and other management practices.

Medium textured soil. Very fine sandy loam, loam, silt loam, or silt.

Metamorphic rock. Rock of any origin altered in mineralogical composition, chemical composition, or structure by heat, pressure, and movement at depth in the earth's crust. Nearly all such rocks are crystalline.

Mine spoil. An accumulation of displaced earthy material, rock, or other waste material removed during mining or excavation. Also called earthy fill.

Mineral soil. Soil that is mainly mineral material and low in organic material. Its bulk density is more than that of organic soil.

Minimum tillage. Only the tillage essential to crop production and prevention of soil damage.

Miscellaneous area. A kind of map unit that has little or no natural soil and supports little or no vegetation.

Moderately coarse textured soil. Coarse sandy loam, sandy loam, or fine sandy loam.

Moderately fine textured soil. Clay loam, sandy clay loam, or silty clay loam.

Mollic epipedon. A thick, dark, humus-rich surface horizon (or horizons) that has high base saturation and pedogenic soil structure. It may include the upper part of the subsoil.

Moraine. In terms of glacial geology, a mound, ridge, or other topographically distinct accumulation of unsorted, unstratified drift, predominantly till, deposited primarily by the direct action of glacial ice in a variety of landforms. Also, a general term for a landform composed mainly of till (except for kame moraines, which are composed mainly of stratified outwash) that has been deposited by a glacier. Some types of moraines are disintegration, end, ground, kame, lateral, recessional, and terminal.

Morphology, soil. The physical makeup of the soil, including the texture, structure, porosity, consistence, color, and other physical, mineral, and biological properties of the various horizons, and the thickness and arrangement of those horizons in the soil profile.

Mottling, soil. Irregular spots of different colors that vary in number and size. Descriptive terms are as follows: abundance—*few, common,* and *many;* size—*fine, medium,* and *coarse;* and contrast—*faint, distinct,* and *prominent*. The size measurements are of the diameter along the greatest dimension. *Fine* indicates less than 5 millimeters (about 0.2 inch); *medium,* from 5 to 15 millimeters (about 0.2 to 0.6 inch); and *coarse,* more than 15 millimeters (about 0.6 inch).

Muck. Dark, finely divided, well decomposed organic soil material. (See Sapric soil material.)

Munsell notation. A designation of color by degrees of three simple variables—hue, value, and chroma. For example, a notation of 10YR 6/4 is a color with hue of 10YR, value of 6, and chroma of 4.

Natric horizon. A special kind of argillic horizon that contains enough exchangeable sodium to have an adverse effect on the physical condition of the subsoil.

Neutral soil. A soil having a pH value of 6.6 to 7.3. (See Reaction, soil.)

Nodules. See Redoximorphic features.

Nose slope (geomorphology). A geomorphic component of hills consisting of the projecting end (laterally convex area) of a hillside. The overland waterflow is predominantly divergent. Nose slopes consist dominantly of colluvium and slope-wash sediments (for example, slope alluvium).

Nutrient, plant. Any element taken in by a plant essential to its growth. Plant nutrients are mainly nitrogen, phosphorus, potassium, calcium, magnesium, sulfur, iron, manganese, copper, boron, and zinc obtained from the soil and carbon, hydrogen, and oxygen obtained from the air and water.

Organic matter. Plant and animal residue in the soil in various stages of decomposition. The content of organic matter in the surface layer is described as follows:

Very low	less than 0.5 percent
Low	0.5 to 1.0 percent
Moderately low	1.0 to 2.0 percent
Moderate	2.0 to 4.0 percent
High	4.0 to 8.0 percent
Very high	more than 8.0 percent

Outwash. Stratified and sorted sediments (chiefly sand and gravel) removed or "washed out" from a glacier by meltwater streams and deposited in front of or beyond the end moraine or the margin of a glacier. The coarser material is deposited nearer to the ice.

Outwash plain. An extensive lowland area of coarse textured glaciofluvial material. An outwash plain is commonly smooth; where pitted, it generally is low in relief.

Paleosol. A general term used to describe a soil that formed on a landscape of the past; it may be a buried soil, a relict soil, or an exhumed soil. (See Geosol.)

Paleoterrace. An erosional remnant of a terrace that retains the surface form and alluvial deposits of its origin but was not emplaced by, and commonly does not grade to, a present-day stream or drainage network.

Pan. A compact, dense layer in a soil that impedes the movement of water and the growth of roots. For example, *hardpan, fragipan, claypan, plowpan,* and *traffic pan*.

Parent material. The unconsolidated organic and mineral material in which soil forms.

Peat. Unconsolidated material, largely undecomposed organic matter, that has accumulated under excess moisture. (See Fibric soil material.)

Ped. An individual natural soil aggregate, such as a granule, a prism, or a block.

Pedisediment. A layer of sediment, eroded from the shoulder and backslope of an erosional slope, that lies on and is being (or was) transported across a gently sloping erosional surface at the foot of a receding hill or mountain slope.

Pedon. The smallest volume that can be called "a soil." A pedon is three dimensional and large enough to permit study of all horizons. Its area ranges from about 10 to 100 square feet (1 square meter to 10 square meters), depending on the variability of the soil.

Peoria Silt (geology). Light yellow tan to gray, calcareous silt that grades from a sandy silt in the bluffs to a clayey silt away from the bluffs. Also known as Peoria Loess. Covers most of Illinois and ranges in thickness from 80 feet in bluff areas along the Mississippi River to 1 or 2 feet in areas away from the bluffs. Deposition occurred 25,000 to 12,500 radiocarbon years ago.

Percolation. The movement of water through the soil.

Permeability. The quality of the soil that enables water or air to move downward through the profile. The rate at which a saturated soil transmits water is accepted as a measure of this quality. In soil physics, the rate is referred to as "saturated hydraulic conductivity," which is defined in the "Soil Survey Manual." In line with conventional usage in the engineering profession and with traditional usage in published soil surveys, this rate of flow continues to be expressed as "permeability." Terms describing permeability, measured in inches per hour, are as follows:

Impermeable	less than 0.0015 inch
Very slow	0.0015 to 0.06 inch
Slow	0.06 to 0.2 inch
Moderately slow	0.2 to 0.6 inch
Moderate	0.6 inch to 2.0 inches
Moderately rapid	2.0 to 6.0 inches
Rapid	6.0 to 20 inches
Very rapid	more than 20 inches

pH value. A numerical designation of acidity and alkalinity in soil. (See Reaction, soil.)

Phase, soil. A subdivision of a soil series based on features that affect its use and management, such as slope, stoniness, and flooding.

Piatt Member (geology). The upper diamicton facies of the Tiskilwa Formation deposited between 19,000 and 18,500 radiocarbon years ago. The Piatt Member consists of gray loam diamicton containing lenses of sorted sediment. Textures may vary, especially near the surface, where this member is commonly interbedded with stratified sediment.

Piping (in tables). Formation of subsurface tunnels or pipelike cavities by water moving through the soil.

Pitting (in tables). Pits caused by melting around ice. They form on the soil after plant cover is removed.

Plastic limit. The moisture content at which a soil changes from semisolid to plastic.

Plasticity index. The numerical difference between the liquid limit and the plastic limit; the range of moisture content within which the soil remains plastic.

Plateau (geomorphology). A comparatively flat area of great extent and elevation; specifically, an extensive land region that is considerably elevated (more than 100 meters) above the adjacent lower lying terrain, is commonly limited on at least one side by an abrupt descent, and has a flat or nearly level surface. A comparatively large part of a plateau surface is near summit level.

Pleistocene (geology). The period in a geologic time series that encompasses all glacial and interglacial stages. Includes the Wisconsinan, Sangamonian, Illinoian, Yarmouthian, and pre-Illinoian. Period covered is about 12,600 to 2 million years before present.

Plowpan. A compacted layer formed in the soil directly below the plowed layer.

Ponding. Standing water on soils in closed depressions. Unless the soils are artificially drained, the water can be removed only by percolation or evapotranspiration.

Poorly graded. Refers to a coarse grained soil or soil material consisting mainly of particles of nearly the same size. Because there is little difference in size of the particles, density can be increased only slightly by compaction.

Pore linings. See Redoximorphic features.

Potential native plant community. See Climax plant community.

Potential rooting depth (effective rooting depth). Depth to which roots could penetrate if the content of moisture in the soil were adequate. The soil has no properties restricting the penetration of roots to this depth.

Prescribed burning. Deliberately burning an area for specific management purposes, under the appropriate conditions of weather and soil moisture and at the proper time of day.

Productivity, soil. The capability of a soil for producing a specified plant or sequence of plants under specific management.

Profile, soil. A vertical section of the soil extending through all its horizons and into the parent material.

Proper grazing use. Grazing at an intensity that maintains enough cover to protect the soil and maintain or improve the quantity and quality of the desirable vegetation. This practice increases the vigor and reproduction capacity of the key plants and promotes the accumulation of litter and mulch necessary to conserve soil and water.

Quaternary (geology). The latest period of time in the stratigraphic column, about 0 to 2 million years before present, represented by local accumulations of glacial (Pleistocene) and postglacial (Holocene) deposits. An artificial division of time used to separate pre-human from post-human sedimentation.

Radnor Till Member (geology). The uppermost member of the Glasford Formation. The Radnor Till Member consists of massive, calcareous, gray till characterized by a high illite content.

Reaction, soil. A measure of acidity or alkalinity of a soil, expressed as pH values. A soil that tests to pH 7.0 is described as precisely neutral in reaction because it is neither acid nor alkaline. The degrees of acidity or alkalinity, expressed as pH values, are:

Ultra acid	less than 3.5
Extremely acid	3.5 to 4.4
Very strongly acid	4.5 to 5.0
Strongly acid	5.1 to 5.5
Moderately acid	5.6 to 6.0
Slightly acid	6.1 to 6.5
Neutral	6.6 to 7.3
Slightly alkaline	7.4 to 7.8
Moderately alkaline	7.9 to 8.4
Strongly alkaline	8.5 to 9.0
Very strongly alkaline	9.1 and higher

Red beds. Sedimentary strata that are mainly red and are made up largely of sandstone and shale.

Redoximorphic concentrations. See Redoximorphic features.

Redoximorphic depletions. See Redoximorphic features.

Redoximorphic features. Redoximorphic features are associated with wetness and result from alternating periods of reduction and oxidation of iron and manganese compounds in the soil. Reduction occurs during saturation with water, and oxidation occurs when the soil is not saturated. Characteristic color patterns are created by these processes. The reduced iron and manganese ions may be removed from a soil if vertical or lateral fluxes of water occur, in which case there is no iron or manganese precipitation in that soil. Wherever the iron and manganese are oxidized and precipitated, they form either soft masses or hard concretions or nodules. Movement of iron and manganese as a result of redoximorphic processes in a soil may result in redoximorphic features that are defined as follows:

1. Redoximorphic concentrations.—These are zones of apparent accumulation of iron-manganese oxides, including:
    - A. Nodules and concretions, which are cemented bodies that can be removed from the soil intact. Concretions are distinguished from nodules on the basis of internal organization. A concretion typically has concentric layers that are visible to the naked eye. Nodules do not have visible organized internal structure; *and*
    - B. Masses, which are noncemented concentrations of substances within the soil matrix; *and*
    - C. Pore linings, i.e., zones of accumulation along pores that may be either coatings on pore surfaces or impregnations from the matrix adjacent to the pores.
2. Redoximorphic depletions.—These are zones of low chroma (chromas less than those in the matrix) where either iron-manganese oxides alone or both iron-manganese oxides and clay have been stripped out, including:
    - A. Iron depletions, i.e., zones that contain low amounts of iron and manganese oxides but have a clay content similar to that of the adjacent matrix; *and*
    - B. Clay depletions, i.e., zones that contain low amounts of iron, manganese, and clay (often referred to as silt coatings or skeletans).

3. Reduced matrix.—This is a soil matrix that has low chroma *in situ* but undergoes a change in hue or chroma within 30 minutes after the soil material has been exposed to air.

Reduced matrix. See Redoximorphic features.

Regolith. All unconsolidated earth materials above the solid bedrock. It includes material weathered in place from all kinds of bedrock and alluvial, glacial, eolian, lacustrine, and pyroclastic deposits.

Relief. The relative difference in elevation between the upland summits and the lowlands or valleys of a given region.

Residuum (residual soil material). Unconsolidated, weathered or partly weathered mineral material that accumulated as bedrock disintegrated in place.

Rill. A very small, steep-sided channel resulting from erosion and cut in unconsolidated materials by concentrated but intermittent flow of water. A rill generally is not an obstacle to wheeled vehicles and is shallow enough to be smoothed over by ordinary tillage.

Riser. The vertical or steep side slope (e.g., escarpment) of terraces, flood-plain steps, or other stepped landforms; commonly a recurring part of a series of natural, steplike landforms, such as successive stream terraces.

Road cut. A sloping surface produced by mechanical means during road construction. It is commonly on the uphill side of the road.

Rock fragments. Rock or mineral fragments having a diameter of 2 millimeters or more; for example, pebbles, cobbles, stones, and boulders.

Root zone. The part of the soil that can be penetrated by plant roots.

Roxana Silt (geology). Brownish red and gray silt loam. Typically leached of carbonates. It overlies the Sangamon Geosol and is typically bounded above by Peoria Silt. It can be distinguished from Peoria Silt by being darker brown and more clayey. Deposition occurred 75,000 to 27,000 radiocarbon years ago.

Runoff. The precipitation discharged into stream channels from an area. The water that flows off the surface of the land without sinking into the soil is called surface runoff. Water that enters the soil before reaching surface streams is called ground-water runoff or seepage flow from ground water.

Saline soil. A soil containing soluble salts in an amount that impairs growth of plants. A saline soil does not contain excess exchangeable sodium.

Sand. As a soil separate, individual rock or mineral fragments from 0.05 millimeter to 2.0 millimeters in diameter. Most sand grains consist of quartz. As a soil textural class, a soil that is 85 percent or more sand and not more than 10 percent clay.

Sandstone. Sedimentary rock containing dominantly sand-sized particles.

Sangamonian (geology). In Illinois, represents an interglacial age between the Illinoian and Wisconsinan glacial stages during the Pleistocene. (See Pleistocene; Geosol.)

Sapric soil material (muck). The most highly decomposed of all organic soil material. Muck has the least amount of plant fiber, the highest bulk density, and the lowest water content at saturation of all organic soil material.

Saturated hydraulic conductivity (Ksat). See Permeability.

Saturation. Wetness characterized by zero or positive pressure of the soil water. Under conditions of saturation, the water will flow from the soil matrix into an unlined auger hole.

Scarification. The act of abrading, scratching, loosening, crushing, or modifying the surface to increase water absorption or to provide a more tillable soil.

Sedimentary rock. A consolidated deposit of clastic particles, chemical precipitates, or organic remains accumulated at or near the surface of the earth under normal low temperature and pressure conditions. Sedimentary rocks include consolidated

equivalents of alluvium, colluvium, drift, and eolian, lacustrine, and marine deposits. Examples are sandstone, siltstone, mudstone, claystone, shale, conglomerate, limestone, dolomite, and coal.

Sequum. A sequence consisting of an illuvial horizon and the overlying eluvial horizon. (See Eluviation.)

Series, soil. A group of soils that have profiles that are almost alike, except for differences in texture of the surface layer. All the soils of a series have horizons that are similar in composition, thickness, and arrangement.

Shale. Sedimentary rock that formed by the hardening of a deposit of clay, silty clay, or silty clay loam and that has a tendency to split into thin layers.

Sheet erosion. The removal of a fairly uniform layer of soil material from the land surface by the action of rainfall and surface runoff.

Shoulder. The convex, erosional surface near the top of a hillslope. A shoulder is a transition from summit to backslope.

Shrink-swell (in tables). The shrinking of soil when dry and the swelling when wet. Shrinking and swelling can damage roads, dams, building foundations, and other structures. It can also damage plant roots.

Side slope (geomorphology). A geomorphic component of hills consisting of a laterally planar area of a hillside. The overland waterflow is predominantly parallel. Side slopes are dominantly colluvium and slope-wash sediments.

Silica. A combination of silicon and oxygen. The mineral form is called quartz.

Silica-sesquioxide ratio. The ratio of the number of molecules of silica to the number of molecules of alumina and iron oxide. The more highly weathered soils or their clay fractions in warm-temperate, humid regions, and especially those in the tropics, generally have a low ratio.

Silt. As a soil separate, individual mineral particles that range in diameter from the upper limit of clay (0.002 millimeter) to the lower limit of very fine sand (0.05 millimeter). As a soil textural class, soil that is 80 percent or more silt and less than 12 percent clay.

Siltstone. An indurated silt having the texture and composition of shale but lacking its fine lamination or fissility; a massive mudstone in which silt predominates over clay.

Similar soils. Soils that share limits of diagnostic criteria, behave and perform in a similar manner, and have similar conservation needs or management requirements for the major land uses in the survey area.

Sinkhole. A closed, circular or elliptical depression, commonly funnel shaped, characterized by subsurface drainage and formed either by dissolution of the surface of underlying bedrock (e.g., limestone, gypsum, or salt) or by collapse of underlying caves within bedrock. Complexes of sinkholes in carbonate-rock terrain are the main components of karst topography.

Site index. A designation of the quality of a forest site based on the height of the dominant stand at an arbitrarily chosen age. For example, if the average height attained by dominant and codominant trees in a fully stocked stand at the age of 50 years is 75 feet, the site index is 75.

Slickensides (pedogenic). Grooved, striated, and/or glossy (shiny) slip faces on structural peds, such as wedges; produced by shrink-swell processes, most commonly in soils that have a high content of expansive clays.

Slope. The inclination of the land surface from the horizontal. Percentage of slope is the vertical distance divided by horizontal distance, then multiplied by 100. Thus, a slope of 20 percent is a drop of 20 feet in 100 feet of horizontal distance. In this survey, the slope classes are as follows:

Nearly level	0 to 2 percent
Gently sloping	2 to 5 percent
Strongly sloping	5 to 10 percent
Moderately steep	10 to 18 percent
Steep	18 to 35 percent
Very steep	35 percent and higher

Slope alluvium. Sediment gradually transported down the slopes of mountains or hills primarily by nonchannel alluvial processes (i.e., slope-wash processes) and characterized by particle sorting. Lateral particle sorting is evident on long slopes. In a profile sequence, sediments may be distinguished by differences in size and/or specific gravity of rock fragments and may be separated by stone lines. Burnished peds and sorting of rounded or subrounded pebbles or cobbles distinguish these materials from unsorted colluvial deposits.

Slow refill (in tables). The slow filling of ponds, resulting from restricted permeability in the soil.

Sodium adsorption ratio (SAR). A measure of the amount of sodium (Na) relative to calcium (Ca) and magnesium (Mg) in the water extract from saturated soil paste. It is the ratio of the Na concentration divided by the square root of one-half of the Ca + Mg concentration.

Soft bedrock. Bedrock that can be excavated with trenching machines, backhoes, small rippers, and other equipment commonly used in construction.

Soil. A natural, three-dimensional body at the earth's surface. It is capable of supporting plants and has properties resulting from the integrated effect of climate and living matter acting on earthy parent material, as conditioned by relief and by the passage of time.

Soil separates. Mineral particles less than 2 millimeters in equivalent diameter and ranging between specified size limits. The names and sizes, in millimeters, of separates recognized in the United States are as follows:

Very coarse sand	2.0 to 1.0
Coarse sand	1.0 to 0.5
Medium sand	0.5 to 0.25
Fine sand	0.25 to 0.10
Very fine sand	0.10 to 0.05
Silt	0.05 to 0.002
Clay	less than 0.002

Solum. The upper part of a soil profile, above the C horizon, in which the processes of soil formation are active. The solum in soil consists of the A, E, and B horizons. Generally, the characteristics of the material in these horizons are unlike those of the material below the solum. The living roots and plant and animal activities are largely confined to the solum.

Stone line. In a vertical cross section, a line formed by scattered fragments or a discrete layer of angular and subangular rock fragments (commonly a gravel- or cobble-sized lag concentration) that formerly was draped across a topographic surface and was later buried by additional sediments. A stone line generally caps material that was subject to weathering, soil formation, and erosion before burial. Many stone lines seem to be buried erosion pavements, originally formed by sheet and rill erosion across the land surface.

Stones. Rock fragments 10 to 24 inches (25 to 60 centimeters) in diameter if rounded or 15 to 24 inches (38 to 60 centimeters) in length if flat.

Stony. Refers to a soil containing stones in numbers that interfere with or prevent tillage.

Strath terrace. A type of stream terrace; formed as an erosional surface cut on bedrock and thinly mantled with stream deposits (alluvium).

Stream terrace. One of a series of platforms in a stream valley, flanking and more or less parallel to the stream channel, originally formed near the level of the stream; represents the remnants of an abandoned flood plain, stream bed, or valley floor produced during a former state of fluvial erosion or deposition.

Stripcropping. Growing crops in a systematic arrangement of strips or bands that provide vegetative barriers to wind erosion and water erosion.

Structure, soil. The arrangement of primary soil particles into compound particles or aggregates. The principal forms of soil structure are—*platy* (laminated), *prismatic* (vertical axis of aggregates longer than horizontal), *columnar* (prisms with rounded tops), *blocky* (angular or subangular), and *granular*. *Structureless* soils are either *single grain* (each grain by itself, as in dune sand) or *massive* (the particles adhering without any regular cleavage, as in many hardpans).

Stubble mulch. Stubble or other crop residue left on the soil or partly worked into the soil. It protects the soil from wind erosion and water erosion after harvest, during preparation of a seedbed for the next crop, and during the early growing period of the new crop.

Subsoil. Technically, the B horizon; roughly, the part of the solum below plow depth.

Subsoiling. Tilling a soil below normal plow depth, ordinarily to shatter a hardpan or claypan.

Substratum. The part of the soil below the solum.

Subsurface layer. Any surface soil horizon (A, E, AB, or EB) below the surface layer.

Summer fallow. The tillage of uncropped land during the summer to control weeds and allow storage of moisture in the soil for the growth of a later crop. A practice common in semiarid regions, where annual precipitation is not enough to produce a crop every year. Summer fallow is frequently practiced before planting winter grain.

Summit. The topographically highest position of a hillslope. It has a nearly level (planar or only slightly convex) surface.

Surface layer. The soil ordinarily moved in tillage, or its equivalent in uncultivated soil, ranging in depth from 4 to 10 inches (10 to 25 centimeters). Frequently designated as the “plow layer,” or the “Ap horizon.”

Surface soil. The A, E, AB, and EB horizons, considered collectively. It includes all subdivisions of these horizons.

Taxadjuncts. Soils that cannot be classified in a series recognized in the classification system. Such soils are named for a series they strongly resemble and are designated as taxadjuncts to that series because they differ in ways too small to be of consequence in interpreting their use and behavior. Soils are recognized as taxadjuncts only when one or more of their characteristics are slightly outside the range defined for the family of the series for which the soils are named.

Terminal moraine. An end moraine that marks the farthest advance of a glacier. It typically has the form of a massive arcuate or concentric ridge, or complex of ridges, and is underlain by till and other types of drift.

Terrace (conservation). An embankment, or ridge, constructed across sloping soils on the contour or at a slight angle to the contour. The terrace intercepts surface runoff so that water soaks into the soil or flows slowly to a prepared outlet. A terrace in a field generally is built so that the field can be farmed. A terrace intended mainly for drainage has a deep channel that is maintained in permanent sod.

Terrace (geomorphology). A steplike surface, bordering a valley floor or shoreline, that represents the former position of a flood plain, lake, or seashore. The term is usually applied both to the relatively flat summit surface (tread) that was cut or built by stream or wave action and to the steeper descending slope (scarp or riser) that has graded to a lower base level of erosion.

Terracettes. Small, irregular steplike forms on steep hillslopes, especially in pasture, formed by creep or erosion of surficial materials that may be induced or enhanced by trampling of livestock, such as sheep or cattle.

Texture, soil. The relative proportions of sand, silt, and clay particles in a mass of soil. The basic textural classes, in order of increasing proportion of fine particles, are *sand, loamy sand, sandy loam, loam, silt loam, silt, sandy clay loam, clay loam, silty clay loam, sandy clay, silty clay,* and *clay*. The sand, loamy sand, and sandy loam classes may be further divided by specifying "coarse," "fine," or "very fine."

Thin layer (in tables). Otherwise suitable soil material that is too thin for the specified use.

Till. Dominantly unsorted and nonstratified drift, generally unconsolidated and deposited directly by a glacier without subsequent reworking by meltwater, and consisting of a heterogeneous mixture of clay, silt, sand, gravel, stones, and boulders; rock fragments of various lithologies are embedded within a finer matrix that can range from clay to sandy loam.

Till plain. An extensive area of level to gently undulating soils underlain predominantly by till and bounded at the distal end by subordinate recessional or end moraines.

Tilth, soil. The physical condition of the soil as related to tillage, seedbed preparation, seedling emergence, and root penetration.

Tiskilwa Formation (geology). The lowermost sequence of red to gray diamicton units of the Wedron Group. The Tiskilwa Formation has three differentiated members: the Tiskilwa Member, the Delavan Member, and the Piatt Member. The Tiskilwa Formation consists of calcareous, reddish gray to gray, medium textured (clay loam to loam) diamicton units that contain lenses of gravel, sand, silt, and clay. Typically it oxidizes to reddish brown, brown, or yellowish brown.

Toeslope. The gently inclined surface at the base of a hillslope. Toeslopes in profile are commonly gentle and linear and are constructional surfaces forming the lower part of a hillslope continuum that grades to valley or closed-depression floors.

Topsoil. The upper part of the soil, which is the most favorable material for plant growth. It is ordinarily rich in organic matter and is used to topdress roadbanks, lawns, and land affected by mining.

Trace elements. Chemical elements, for example, zinc, cobalt, manganese, copper, and iron, in soils in extremely small amounts. They are essential to plant growth.

Tread. The flat to gently sloping, topmost, laterally extensive slope of terraces, flood-plain steps, or other stepped landforms; commonly a recurring part of a series of natural steplike landforms, such as successive stream terraces.

Upland. An informal, general term for the higher ground of a region, in contrast with a low-lying adjacent area, such as a valley or plain, or for land at a higher elevation than the flood plain or low stream terrace; land above the footslope zone of the hillslope continuum.

Valley fill. The unconsolidated sediment deposited by any agent (water, wind, ice, or mass wasting) so as to fill or partly fill a valley.

Variegation. Refers to patterns of contrasting colors assumed to be inherited from the parent material rather than to be the result of poor drainage.

Varve. A sedimentary layer or a lamina or sequence of laminae deposited in a body of still water within a year. Specifically, a thin pair of graded glaciolacustrine layers seasonally deposited, usually by meltwater streams, in a glacial lake or other body of still water in front of a glacier.

Water bars. Smooth, shallow ditches or depressional areas that are excavated at an angle across a sloping road. They are used to reduce the downward velocity of water and divert it off and away from the road surface. Water bars can easily be driven over if constructed properly.

Weathering. All physical disintegration, chemical decomposition, and biologically induced changes in rocks or other deposits at or near the earth's surface by atmospheric or biologic agents or by circulating surface waters but involving essentially no transport of the altered material.

Wedron Group (geology). Mostly diamicton of the Wisconsinan Age.

Well graded. Refers to soil material consisting of coarse grained particles that are well distributed over a wide range in size or diameter. Such soil normally can be easily increased in density and bearing properties by compaction. Contrasts with poorly graded soil.

Wilting point (or permanent wilting point). The moisture content of soil, on an ovendry basis, at which a plant (specifically a sunflower) wilts so much that it does not recover when placed in a humid, dark chamber.

Windthrow. The uprooting and tipping over of trees by the wind.

Wisconsinan (geology). In Illinois, represents the last glacial stage of ice advance during the Pleistocene. Follows the Sangamonian interglacial stage. (See Pleistocene.)

Yarmouthian (geology). In Illinois, represents an interglacial stage between the pre-Illinoian and Illinoian glacial stages during the Pleistocene. (See Pleistocene.)

Tables

Table 1.--Temperature and Precipitation

(Recorded in the period 1971-2000 at Decatur, Illinois)

Month	Temperature						Precipitation				
				2 years in 10 will have--				2 years in 10 will have--			
	Average daily maximum	Average daily minimum	Average	Maximum temperature higher than--	Minimum temperature lower than--	Average number of growing degree days*	Average	Less than--	More than--	Average number of days with 0.10 inch or more	Average snowfall
	°F	°F	°F	°F	°F	Units	In	In	In		In
January----	34.3	17.0	25.6	62	-16	1	2.11	0.98	3.13	4	7.5
February---	40.7	22.3	31.5	69	-12	7	1.94	.78	3.00	4	4.9
March------	52.4	31.8	42.1	81	5	50	3.25	1.71	4.79	7	2.2
April------	65.1	41.7	53.4	86	20	172	3.63	2.00	5.18	7	.4
May--------	75.9	51.4	63.6	92	31	423	4.50	2.00	6.56	7	.0
June-------	84.5	60.5	72.5	98	42	674	3.79	1.89	5.49	6	.0
July-------	87.7	64.5	76.1	99	49	805	4.60	1.81	6.85	6	.0
August-----	85.9	62.8	74.4	99	45	754	4.10	1.88	6.23	5	.0
September--	79.8	54.9	67.3	96	33	520	2.98	1.18	4.62	4	.0
October----	67.8	43.8	55.8	88	21	224	2.76	1.55	3.63	5	.0
November---	51.9	33.4	42.7	77	10	50	3.16	1.57	4.62	6	1.1
December---	39.5	22.9	31.2	66	-8	7	2.86	1.23	4.24	5	5.4
Yearly:											
Average---	63.8	42.2	53.0	---	---	---	---	---	---	---	---
Extreme---	106	-23	---	101	-19	---	---	---	---	---	---
Total-----	---	---	---	---	---	3,687	39.68	30.22	46.02	66	21.5

* A growing degree day is a unit of heat available for plant growth. It can be calculated by adding the maximum and minimum daily temperatures, dividing the sum by 2, and subtracting the temperature below which growth is minimal for the principal crops in the area (50 degrees F).

Table 2.--Freeze Dates in Spring and Fall

(Recorded in the period 1971-2000 at Decatur, Illinois)

Probability	Temperature		
	24 °F or lower	28 °F or lower	32 °F or lower
Last freezing temperature in spring:			
1 year in 10 later than--	Apr. 15	Apr. 21	May 12
2 years in 10 later than--	Apr. 10	Apr. 17	May 6
5 years in 10 later than--	Apr. 1	Apr. 9	Apr. 23
First freezing temperature in fall:			
1 year in 10 earlier than--	Oct. 15	Oct. 7	Sept. 25
2 years in 10 earlier than--	Oct. 21	Oct. 12	Sept. 30
5 years in 10 earlier than--	Nov. 1	Oct. 22	Oct. 10

Table 3.--Growing Season

(Recorded in the period 1971-2000 at Decatur, Illinois)

Probability	Daily minimum temperature during growing season		
	Higher than 24 °F	Higher than 28 °F	Higher than 32 °F
	Days	Days	Days
9 years in 10	190	175	144
8 years in 10	198	182	152
5 years in 10	214	195	168
2 years in 10	230	208	185
1 year in 10	238	215	193

Table 4.--Classification of the Soils

(An asterisk in the first column indicates a taxadjunct to the series. See text for a description of those characteristics that are outside the range of the series)

Soil name	Family or higher taxonomic class
Aetna	Fine-silty, mixed, superactive, nonacid, mesic Fluvaquentic Endoaquepts
Birkbeck	Fine-silty, mixed, superactive, mesic Oxyaquic Hapludalfs
Buckhart	Fine-silty, mixed, superactive, mesic Oxyaquic Argiudolls
Camden	Fine-silty, mixed, superactive, mesic Typic Hapludalfs
Catlin	Fine-silty, mixed, superactive, mesic Oxyaquic Argiudolls
*Catlin (171B2)	Fine-silty, mixed, superactive, mesic Aquollic Hapludalfs
*Catlin (171C2)	Fine-silty, mixed, superactive, mesic Mollic Oxyaquic Hapludalfs
*Dana	Fine-silty, mixed, superactive, mesic Mollic Oxyaquic Hapludalfs
Denny	Fine, smectitic, mesic Mollic Albaqualfs
Edgington	Fine-silty, mixed, superactive, mesic Argiaquic Argialbolls
Elburn	Fine-silty, mixed, superactive, mesic Aquic Argiudolls
Harpster	Fine-silty, mixed, superactive, mesic Typic Calciaquolls
Hartsburg	Fine-silty, mixed, superactive, mesic Typic Endoaquolls
Hennepin	Fine-loamy, mixed, active, mesic Typic Eutrudepts
Ipava	Fine, smectitic, mesic Aquic Argiudolls
Kaneville	Fine-silty, mixed, superactive, mesic Mollic Oxyaquic Hapludalfs
Kendall	Fine-silty, mixed, superactive, mesic Aeric Endoaqualfs
Keomah	Fine, smectitic, mesic Aeric Endoaqualfs
Lawson	Fine-silty, mixed, superactive, mesic Aquic Cumulic Hapludolls
Miami	Fine-loamy, mixed, active, mesic Oxyaquic Hapludalfs
Orthents	Loamy, mesic Udorthents
Osco	Fine-silty, mixed, superactive, mesic Typic Argiudolls
Peotone	Fine, smectitic, mesic Cumulic Vertic Endoaquolls
Plano	Fine-silty, mixed, superactive, mesic Typic Argiudolls
*Plano	Fine-silty, mixed, superactive, mesic Mollic Hapludalfs
Proctor	Fine-silty, mixed, superactive, mesic Typic Argiudolls
*Proctor	Fine-silty, mixed, superactive, mesic Mollic Hapludalfs
Radford	Fine-silty, mixed, superactive, mesic Fluvaquentic Hapludolls
Ross	Fine-loamy, mixed, superactive, mesic Cumulic Hapludolls
Rozetta	Fine-silty, mixed, superactive, mesic Typic Hapludalfs
*Rozetta	Fine-silty, mixed, superactive, mesic Oxyaquic Hapludalfs
Russell	Fine-silty, mixed, superactive, mesic Typic Hapludalfs
Sable	Fine-silty, mixed, superactive, mesic Typic Endoaquolls
Sawmill	Fine-silty, mixed, superactive, mesic Cumulic Endoaquolls
Senachwine	Fine-loamy, mixed, active, mesic Typic Hapludalfs
Shiloh	Fine, smectitic, mesic Cumulic Vertic Endoaquolls
St. Charles	Fine-silty, mixed, superactive, mesic Typic Hapludalfs
Tama	Fine-silty, mixed, superactive, mesic Typic Argiudolls
*Wyanet	Fine-loamy, mixed, active, mesic Mollic Hapludalfs

Table 5.--Acreage and Proportionate Extent of the Soils

Map symbol	Soil name	Acres	Percent
17A	Keomah silt loam, 0 to 2 percent slopes	3,352	1.3
27D2	Miami silt loam, 10 to 18 percent slopes, eroded	3,303	1.3
43A	Ipava silt loam, 0 to 2 percent slopes	40,650	15.7
45A	Denny silt loam, 0 to 2 percent slopes	247	*
56B2	Dana silt loam, 2 to 5 percent slopes, eroded	2,866	1.1
67A	Harpster silty clay loam, 0 to 2 percent slopes	2,632	1.0
68A	Sable silty clay loam, 0 to 2 percent slopes	74,663	28.9
86B	Osco silt loam, 2 to 5 percent slopes	2,324	0.9
134C2	Camden silt loam, 5 to 10 percent slopes, eroded	421	0.2
138A	Shiloh silty clay loam, 0 to 2 percent slopes	172	*
148B2	Proctor silt loam, 2 to 5 percent slopes, eroded	261	0.1
171B	Catlin silt loam, 2 to 5 percent slopes	967	0.4
171B2	Catlin silt loam, 2 to 5 percent slopes, eroded	43,722	16.9
171C2	Catlin silt loam, 5 to 10 percent slopes, eroded	1,342	0.5
198A	Elburn silt loam, 0 to 2 percent slopes	2,115	0.8
199A	Plano silt loam, 0 to 2 percent slopes	740	0.3
199B2	Plano silt loam, 2 to 5 percent slopes, eroded	629	0.2
233B	Birkbeck silt loam, 2 to 5 percent slopes	17,874	6.9
233C2	Birkbeck silt loam, 5 to 10 percent slopes, eroded	2,062	0.8
243B	St. Charles silt loam, 2 to 5 percent slopes	523	0.2
244A	Hartsburg silty clay loam, 0 to 2 percent slopes	3,391	1.3
272A	Edgington silt loam, 0 to 2 percent slopes	475	0.2
279B	Rozetta silt loam, 2 to 5 percent slopes	88	*
279B2	Rozetta silt loam, 2 to 5 percent slopes, eroded	1,293	0.5
322C2	Russell silt loam, 5 to 10 percent slopes, eroded	6,797	2.6
322D3	Russell silty clay loam, 10 to 18 percent slopes, severely eroded	655	0.3
330A	Peotone silty clay loam, 0 to 2 percent slopes	451	0.2
533	Urban land	371	0.1
618F	Senachwine silt loam, 18 to 35 percent slopes	5,380	2.1
618G	Senachwine silt loam, 35 to 60 percent slopes	2,723	1.1
622C2	Wyanet silt loam, 5 to 10 percent slopes, eroded	1,082	0.4
667B	Kaneville silt loam, 2 to 5 percent slopes	11	*
726A	Elburn silt loam, sandy substratum, 0 to 2 percent slopes	525	0.2
737B	Tama silt loam, very deep to sand, 2 to 5 percent slopes	185	*
748A	Plano silt loam, sandy substratum, 0 to 2 percent slopes	86	*
748B	Plano silt loam, sandy substratum, 2 to 5 percent slopes	505	0.2
749B	Buckhart silt loam, till substratum, 2 to 5 percent slopes	11,601	4.5
802B	Orthents, loamy, undulating	1,126	0.4
802D	Orthents, loamy, 2 to 20 percent slopes	321	0.1
865	Pits, gravel	52	*
964F	Miami and Hennepin soils, 18 to 35 percent slopes	9	*
3073A	Ross silt loam, 0 to 2 percent slopes, frequently flooded	280	0.1
3107A	Sawmill silty clay loam, 0 to 2 percent slopes, frequently flooded	4,727	1.8
3451A	Lawson silt loam, 0 to 2 percent slopes, frequently flooded	5,156	2.0
7134C	Camden silt loam, 5 to 10 percent slopes, rarely flooded	257	*
7148B	Proctor silt loam, 2 to 5 percent slopes, rarely flooded	28	*
7198A	Elburn silt loam, 0 to 2 percent slopes, rarely flooded	471	0.2
7199A	Plano silt loam, 0 to 2 percent slopes, rarely flooded	476	0.2
7199B	Plano silt loam, 2 to 5 percent slopes, rarely flooded	471	0.2
7242A	Kendall silt loam, 0 to 2 percent slopes, rarely flooded	144	*
7243B	St. Charles silt loam, 2 to 5 percent slopes, rarely flooded	994	0.4
8074A	Radford silt loam, 0 to 2 percent slopes, occasionally flooded	1	*
8107A	Sawmill silty clay loam, 0 to 2 percent slopes, occasionally flooded	1,030	0.4
8451A	Lawson silt loam, 0 to 2 percent slopes, occasionally flooded	744	0.3
8720A	Aetna silt loam, 0 to 2 percent slopes, occasionally flooded	484	0.2
M-W	Miscellaneous water	199	*
W	Water	5,306	2.1
	Total	258,760	100.0

* Less than 0.1 percent.

Table 6.--Limitations and Hazards Affecting Cropland and Pastureland

(See text for a description of the limitations and hazards listed in this table. Only the soils that are generally available for use as cropland or pastureland are listed. Absence of an entry indicates that the soil is generally not suited to use as cropland or pastureland)

Map symbol and soil name	Limitations and hazards affecting cropland	Limitations and hazards affecting pastureland
17A:		
Keomah	Wetness, crusting, restricted permeability	Wetness, low pH
27D2:		
Miami	High pH, crusting, water erosion	High pH, water erosion
43A:		
Ipava	Wetness	Wetness
45A:		
Denny	Wetness, ponding, crusting, restricted permeability	Wetness, ponding, frost heave
56B2:		
Dana	Crusting, water erosion	Low pH, water erosion
67A:		
Harpster	Wetness, ponding, high pH, excess lime	Wetness, ponding, high pH, excess lime, frost heave
68A:		
Sable	Wetness, ponding	Wetness, ponding, frost heave
86B:		
Osco	Water erosion	Low pH
134C2:		
Camden	Crusting, water erosion	Low pH, water erosion
138A:		
Shiloh	Wetness, ponding, poor tilth	Wetness, ponding, frost heave
148B2:		
Proctor	Water erosion	Water erosion
171B:		
Catlin	Water erosion	Water erosion
171B2:		
Catlin	Wetness, water erosion	Wetness, water erosion
171C2:		
Catlin	Water erosion	Water erosion
198A:		
Elburn	Wetness	Wetness
199A:		
Plano	No major limitations	Low pH
199B2:		
Plano	Crusting, water erosion	Water erosion

Table 6.--Limitations and Hazards Affecting Cropland and Pastureland--Continued

Map symbol and soil name	Limitations and hazards affecting cropland	Limitations and hazards affecting pastureland
233B:		
Birkbeck	Crusting, water erosion	Low pH, water erosion
233C2:		
Birkbeck	Crusting, water erosion	Low pH, water erosion
243B:		
St. Charles	Crusting, water erosion	Low pH, water erosion
244A:		
Hartsburg	Wetness, ponding, high pH, excess lime	Wetness, ponding, high pH, excess lime, frost heave
272A:		
Edgington	Wetness, ponding	Wetness, ponding, low pH, frost heave
279B:		
Rozetta	Crusting, water erosion	Low pH, water erosion
279B2:		
Rozetta	Crusting, water erosion	Water erosion
322C2:		
Russell	Root-restrictive layer, crusting, water erosion	Root-restrictive layer, low pH, water erosion
322D3:		
Russell	Root-restrictive layer, poor tilth, crusting, water erosion	Root-restrictive layer, poor tilth, low pH, water erosion
330A:		
Peotone	Wetness, ponding, poor tilth	Wetness, ponding, frost heave
618F:		
Senachwine	---	Equipment limitation, low pH, water erosion
618G:		
Senachwine	---	---
622C2:		
Wyanet	High pH, crusting, water erosion	High pH, water erosion
667B:		
Kaneville	Crusting, water erosion	Water erosion
726A:		
Elburn, sandy substratum	Wetness, excessive permeability	Wetness, excessive permeability
737B:		
Tama, very deep to sand	Water erosion, excessive permeability	Excessive permeability
748A:		
Plano, sandy substratum	Excessive permeability	Excessive permeability
748B:		
Plano, sandy substratum	Water erosion, excessive permeability	Excessive permeability

Table 6.--Limitations and Hazards Affecting Cropland and Pastureland--Continued

Map symbol and soil name	Limitations and hazards affecting cropland	Limitations and hazards affecting pastureland
749B:		
Buckhart, till substratum	Water erosion	No major limitations
802B:		
Orthents, loamy	---	---
802D:		
Orthents, loamy	---	---
964F:		
Miami	---	Equipment limitation, root-restrictive layer, high pH, water erosion
Hennepin	---	Equipment limitation, poor tilth, high pH, water erosion, excess lime
3073A:		
Ross	Flooding, crusting	Flooding
3107A:		
Sawmill	Flooding, ponding, wetness	Flooding, ponding, frost heave, wetness
3451A:		
Lawson	Wetness, flooding	Wetness, flooding
7134C:		
Camden	Crusting, water erosion	Low pH, water erosion
7148B:		
Proctor	Water erosion	No major limitations
7198A:		
Elburn	Wetness	Wetness
7199A:		
Plano	No major limitations	Low pH
7199B:		
Plano	Water erosion	No major limitations
7242A:		
Kendall	Wetness, crusting	Wetness, low pH
7243B:		
St. Charles	Crusting, water erosion	Low pH, water erosion
8074A:		
Radford	Flooding, wetness	Flooding, wetness
8107A:		
Sawmill	Flooding, ponding, wetness	Flooding, ponding, frost heave, wetness
8451A:		
Lawson	Flooding, wetness	Flooding, wetness
8720A:		
Aetna	Flooding, wetness, crusting	Flooding, wetness

Table 7.--Land Capability and Yields per Acre of Crops and Pasture

(Yields are those that can be expected under a high level of management. They are for nonirrigated areas. Absence of a yield indicates that the soil is not suited to the crop or the crop generally is not grown on the soil)

Map symbol and soil name	Land capability	Corn	Soybeans	Winter wheat	Oats	Grass-legume hay	Grass-legume pasture
		Bu	Bu	Bu	Bu	Tons	AUM*
17A:							
Keomah	2w	145	46	59	75	4.63	6.80
27D2:							
Miami	4e	119	38	47	59	3.32	4.80
43A:							
Ipava	1	172	56	69	90	5.31	7.80
45A:							
Denny	3w	143	47	58	69	4.41	6.50
56B2:							
Dana	2e	154	48	59	85	5.37	7.80
67A:							
Harpster	2w	164	52	61	80	4.86	7.20
68A:							
Sable	2w	173	57	67	89	5.20	7.70
86B:							
Osco	2e	170	53	67	91	6.16	9.00
134C2:							
Camden	3e	139	43	54	73	3.99	5.80
138A:							
Shiloh	3w	158	52	31	79	4.86	7.16
148B2:							
Proctor	2e	158	49	60	85	5.47	5.38
171B:							
Catlin	2e	166	52	65	88	6.04	8.91
171B2:							
Catlin	2e	160	50	63	85	5.80	8.60
171C2:							
Catlin	3e	156	49	61	83	5.67	8.30
198A:							
Elburn	1	178	55	67	85	5.20	7.67
199A:							
Plano	1	175	54	67	93	6.33	9.30
199B2:							
Plano	2e	166	51	64	88	6.01	8.90
233B:							
Birkbeck	2e	149	47	59	78	4.58	6.76

See footnote at end of table.

Table 7.--Land Capability and Yields per Acre of Crops and Pasture--Continued

Map symbol and soil name	Land capability	Corn	Soybeans	Winter wheat	Oats	Grass-legume hay	Grass-legume pasture
		Bu	Bu	Bu	Bu	Tons	AUM*
233C2:							
Birkbeck------------	3e	140	44	56	74	4.31	6.30
243B:							
St. Charles---------	2e	149	47	58	77	4.58	6.80
244A:							
Hartsburg-----------	2w	164	53	61	80	4.86	7.20
272A:							
Edgington-----------	2w	150	49	59	76	4.75	7.00
279B:							
Rozetta-------------	2e	147	46	58	75	4.70	6.90
279B2:							
Rozetta-------------	2e	141	44	56	72	4.51	6.60
322C2:							
Russell-------------	3e	134	42	53	68	3.79	5.52
322D3:							
Russell-------------	4e	117	37	46	59	3.30	4.68
330A:							
Peotone-------------	3w	148	49	55	70	4.52	6.67
533:							
Urban land----------	8	---	---	---	---	---	---
618F:							
Senachwine----------	6e	---	---	---	---	2.37	3.45
618G:							
Senachwine----------	7e	---	---	---	---	---	2.20
622C2:							
Wyanet--------------	3e	135	44	55	66	4.42	6.40
667B:							
Kaneville-----------	2e	159	49	60	84	3.80	5.60
726A:							
Elburn, sandy substratum---------	1	169	52	60	89	4.97	7.30
737B:							
Tama, very deep to sand---------------	2e	167	52	65	87	6.48	9.50
748A:							
Plano, sandy substratum---------	1	168	51	61	88	6.13	8.70
748B:							
Plano, sandy substratum---------	2e	166	50	60	87	6.10	8.60

See footnote at end of table.

Table 7.--Land Capability and Yields per Acre of Crops and Pasture--Continued

Map symbol and soil name	Land capability	Corn	Soybeans	Winter wheat	Oats	Grass-legume hay	Grass-legume pasture
		Bu	Bu	Bu	Bu	Tons	AUM*
749B:							
Buckhart, till substratum---------	2e	169	54	66	89	6.60	9.20
802B:							
Orthents, loamy-----	3e	---	---	---	---	---	---
802D:							
Orthents, loamy-----	4e	---	---	---	---	---	---
865:							
Pits, gravel--------	8	---	---	---	---	---	---
964F:							
Miami and Hennepin--	6e	---	---	---	---	2.78	4.10
3073A:							
Ross----------------	3w	147	48	---	---	4.37	6.45
3107A:							
Sawmill-------------	3w	153	49	---	---	4.68	6.90
3451A:							
Lawson--------------	3w	154	49	---	---	4.68	6.90
7134C:							
Camden--------------	3e	145	45	56	76	4.16	6.08
7148B:							
Proctor-------------	2e	164	51	62	88	5.70	8.40
7198A:							
Elburn--------------	1	178	55	67	85	5.20	7.67
7199A:							
Plano---------------	1	175	54	67	93	6.33	9.30
7199B:							
Plano---------------	2e	173	53	66	92	6.27	9.23
7242A:							
Kendall-------------	2w	155	48	60	80	4.75	7.00
7243B:							
St. Charles---------	2e	149	47	58	77	4.58	6.80
8074A:							
Radford-------------	2w	167	53	66	89	4.97	7.30
8107A:							
Sawmill-------------	2w	170	54	64	87	5.20	7.70
8451A:							
Lawson--------------	2w	171	55	66	87	5.20	7.70
8720A:							
Aetna---------------	2w	162	51	60	80	4.52	6.70

* Animal unit month: The amount of forage required to feed one mature cow, of approximately 1,000 pounds weight, with or without a calf, for 30 days.

Table 8.--Prime Farmland

(Only the soils considered prime farmland are listed. Urban or built-up areas of the soils listed are not considered prime farmland. If a soil is prime farmland only under certain conditions, the conditions are specified in parentheses after the soil name)

Map symbol	Soil name
17A	Keomah silt loam, 0 to 2 percent slopes (where drained)
43A	Ipava silt loam, 0 to 2 percent slopes
45A	Denny silt loam, 0 to 2 percent slopes (where drained)
56B2	Dana silt loam, 2 to 5 percent slopes, eroded
67A	Harpster silty clay loam, 0 to 2 percent slopes (where drained)
68A	Sable silty clay loam, 0 to 2 percent slopes (where drained)
86B	Osco silt loam, 2 to 5 percent slopes
138A	Shiloh silty clay loam, 0 to 2 percent slopes (where drained)
148B2	Proctor silt loam, 2 to 5 percent slopes, eroded
171B	Catlin silt loam, 2 to 5 percent slopes
171B2	Catlin silt loam, 2 to 5 percent slopes, eroded
198A	Elburn silt loam, 0 to 2 percent slopes
199A	Plano silt loam, 0 to 2 percent slopes
199B2	Plano silt loam, 2 to 5 percent slopes, eroded
233B	Birkbeck silt loam, 2 to 5 percent slopes
243B	St. Charles silt loam, 2 to 5 percent slopes
244A	Hartsburg silty clay loam, 0 to 2 percent slopes (where drained)
272A	Edgington silt loam, 0 to 2 percent slopes (where drained)
279B	Rozetta silt loam, 2 to 5 percent slopes
279B2	Rozetta silt loam, 2 to 5 percent slopes, eroded
330A	Peotone silty clay loam, 0 to 2 percent slopes (where drained)
667B	Kaneville silt loam, 2 to 5 percent slopes
726A	Elburn silt loam, sandy substratum, 0 to 2 percent slopes
737B	Tama silt loam, very deep to sand, 2 to 5 percent slopes
748A	Plano silt loam, sandy substratum, 0 to 2 percent slopes
748B	Plano silt loam, sandy substratum, 2 to 5 percent slopes
749B	Buckhart silt loam, till substratum, 2 to 5 percent slopes
3073A	Ross silt loam, 0 to 2 percent slopes, frequently flooded (where protected from flooding or not frequently flooded during the growing season)
3107A	Sawmill silty clay loam, 0 to 2 percent slopes, frequently flooded (where drained and either protected from flooding or not frequently flooded during the growing season)
3451A	Lawson silt loam, 0 to 2 percent slopes, frequently flooded (where protected from flooding or not frequently flooded during the growing season)
7148B	Proctor silt loam, 2 to 5 percent slopes, rarely flooded
7198A	Elburn silt loam, 0 to 2 percent slopes, rarely flooded
7199A	Plano silt loam, 0 to 2 percent slopes, rarely flooded
7199B	Plano silt loam, 2 to 5 percent slopes, rarely flooded
7242A	Kendall silt loam, 0 to 2 percent slopes, rarely flooded (where drained)
7243B	St. Charles silt loam, 2 to 5 percent slopes, rarely flooded
8074A	Radford silt loam, 0 to 2 percent slopes, occasionally flooded
8107A	Sawmill silty clay loam, 0 to 2 percent slopes, occasionally flooded (where drained)
8451A	Lawson silt loam, 0 to 2 percent slopes, occasionally flooded
8720A	Aetna silt loam, 0 to 2 percent slopes, occasionally flooded (where drained)

Table 9.--Hydric Soils

(Only those map units that have hydric components are listed. See text for a description of hydric qualities and definitions of the hydric criteria codes)

Map symbol and map unit name	Component	Hydric status	Local landform	Hydric criteria
17A:				
Keomah silt loam, 0 to 2 percent slopes	Keomah	Not hydric	ground moraine	---
	Denny	Hydric	depression	2B3
	Sable	Hydric	swale	2B3
27D2:				
Miami silt loam, 10 to 18 percent slopes, eroded	Miami	Not hydric	ground moraine	---
	Sawmill	Hydric	flood plain	2B3
43A:				
Ipava silt loam, 0 to 2 percent slopes	Ipava	Not hydric	ground moraine	---
	Denny	Hydric	depression	2B3
	Sable	Hydric	swale	2B3
45A:				
Denny silt loam, 0 to 2 percent slopes	Denny	Hydric	depression	2B3
56B2:				
Dana silt loam, 2 to 5 percent slopes, eroded	Dana	Not hydric	ground moraine	---
	Sable	Hydric	swale	2B3
67A:				
Harpster silty clay loam, 0 to 2 percent slopes	Harpster	Hydric	ground moraine, lake plain, outwash plain, stream terrace, depression	2B3
68A:				
Sable silty clay loam, 0 to 2 percent slopes	Sable	Hydric	ground moraine	2B3
86B:				
Osco silt loam, 2 to 5 percent slopes	Osco	Not hydric	ground moraine	---
	Sable	Hydric	swale	2B3
	Denny	Hydric	depression	2B3
134C2:				
Camden silt loam, 5 to 10 percent slopes, eroded	Camden	Not hydric	outwash plain, stream terrace	---
	Sawmill	Hydric	flood plain	2B3
138A:				
Shiloh silty clay loam, 0 to 2 percent slopes	Shiloh	Hydric	depression, till plain	2B3
148B2:				
Proctor silt loam, 2 to 5 percent slopes, eroded	Proctor	Not hydric	outwash plain	---
	Sable	Hydric	swale	2B3
171B:				
Catlin silt loam, 2 to 5 percent slopes	Catlin	Not hydric	ground moraine, end moraine	---
	Sable	Hydric	swale	2B3
171B2:				
Catlin silt loam, 2 to 5 percent slopes, eroded	Catlin	Not hydric	ground moraine	---
	Sable	Hydric	swale	2B3

Table 9.--Hydric Soils--Continued

Map symbol and map unit name	Component	Hydric status	Local landform	Hydric criteria
171C2:				
Catlin silt loam, 5 to 10 percent slopes, eroded	Catlin	Not hydric	ground moraine, end moraine	---
	Sable	Hydric	swale	2B3
198A:				
Elburn silt loam, 0 to 2 percent slopes	Elburn	Not hydric	outwash plain, stream terrace	---
	Edgington	Hydric	depression	2B3
	Sable	Hydric	swale	2B3
199A:				
Plano silt loam, 0 to 2 percent slopes	Plano	Not hydric	outwash plain, stream terrace	---
	Sable	Hydric	swale	2B3
199B2:				
Plano silt loam, 2 to 5 percent slopes, eroded	Plano	Not hydric	outwash plain	---
	Sable	Hydric	swale	2B3
233B:				
Birkbeck silt loam, 2 to 5 percent slopes	Birkbeck	Not hydric	ground moraine end moraine	---
	Sable	Hydric	swale	2B3
233C2:				
Birkbeck silt loam, 5 to 10 percent slopes, eroded	Birkbeck	Not hydric	end moraine, ground moraine	---
	Sable	Hydric	drainageway	2B3
243B:				
St. Charles silt loam, 2 to 5 percent slopes	St. Charles	Not hydric	outwash plain, stream terrace	---
	Sawmill	Hydric	flood plain	2B3
244A:				
Hartsburg silty clay loam, 0 to 2 percent slopes	Hartsburg	Hydric	outwash plain, ground moraine	2B3
	Harpster	Hydric	depression	2B3
272A:				
Edgington silt loam, 0 to 2 percent slopes	Edgington	Hydric	depression, ground moraine	2B3
279B:				
Rozetta silt loam, 2 to 5 percent slopes	Rozetta	Not hydric	ground moraine	---
	Sable	Hydric	swale	2B3
279B2:				
Rozetta silt loam, 2 to 5 percent slopes, eroded	Rozetta	Not hydric	ground moraine	---
	Sable	Hydric	swale	2B3
322C2:				
Russell silt loam, 5 to 10 percent slopes, eroded	Russell	Not hydric	ground moraine, end moraine	---
	Sable	Hydric	swale	2B3
322D3:				
Russell silty clay loam, 10 to 18 percent slopes, severely eroded	Russell	Not hydric	ground moraine, end moraine	---
	Sable	Hydric	swale	2B3

Table 9.--Hydric Soils--Continued

Map symbol and map unit name	Component	Hydric status	Local landform	Hydric criteria
330A:				
Peotone silty clay loam, 0 to 2 percent slopes	Peotone	Hydric	closed depression	2B3
618F:				
Senachwine silt loam, 18 to 35 percent slopes	Senachwine	Not hydric	end moraine, ground moraine	---
	Sawmill	Hydric	flood plain	2B3
618G:				
Senachwine silt loam, 35 to 60 percent slopes	Senachwine	Not hydric	end moraine, ground moraine	---
	Sawmill	Hydric	flood plain	2B3
622C2:				
Wyanet silt loam, 5 to 10 percent slopes, eroded	Wyanet	Not hydric	ground moraine, end moraine	---
	Sable	Hydric	swale	2B3
667B:				
Kaneville silt loam, 2 to 5 percent slopes	Kaneville	Not hydric	stream terrace	---
	Edgington	Hydric	depression	2B3
726A:				
Elburn silt loam, sandy substratum, 0 to 2 percent slopes	Elburn	Not hydric	outwash plain	---
	Sable	Hydric	swale	2B3
737B:				
Tama silt loam, very deep to sand, 2 to 5 percent slopes	Tama	Not hydric	outwash plain	---
	Sable	Hydric	swale	2B3
748A:				
Plano silt loam, sandy substratum, 0 to 2 percent slopes	Plano	Not hydric	outwash plain	---
	Sable	Hydric	swale	2B3
748B:				
Plano silt loam, sandy substratum, 2 to 5 percent slopes	Plano	Not hydric	outwash plain	---
	Sable	Hydric	swale	2B3
749B:				
Buckhart silt loam, till substratum, 2 to 5 percent slopes	Buckhart	Not hydric	ground moraine	---
	Sable	Hydric	swale	2B3
802D:				
Orthents, loamy, 2 to 20 percent slopes	Orthents	Not hydric	---	---
	Sawmill	Hydric	flood plain	2B3
964F:				
Miami and Hennepin soils, 18 to 35 percent slopes	Miami	Not hydric	end moraine	---
	Hennepin	Not hydric	end moraine	---
	Sawmill	Hydric	flood plain	2B3
3073A:				
Ross silt loam, 0 to 2 percent slopes, frequently flooded	Ross	Not hydric	flood-plain step, flood plain	---
	Sawmill	Hydric	swale	2B3
3107A:				
Sawmill silty clay loam, 0 to 2 percent slopes, frequently flooded	Sawmill	Hydric	flood plain	2B3

Table 9.--Hydric Soils--Continued

Map symbol and map unit name	Component	Hydric status	Local landform	Hydric criteria
3451A:				
Lawson silt loam, 0 to 2 percent slopes, frequently flooded	Lawson	Not hydric	flood plain	---
	Sawmill	Hydric	swale	2B3
7134C:				
Camden silt loam, 5 to 10 percent slopes, rarely flooded	Camden	Not hydric	flood-plain step, stream terrace	---
	Sawmill	Hydric	flood plain	2B3
7148B:				
Proctor silt loam, 2 to 5 percent slopes, rarely flooded	Proctor	Not hydric	flood-plain step, stream terrace	---
	Sawmill	Hydric	flood plain	2B3
7198A:				
Elburn silt loam, 0 to 2 percent slopes, rarely flooded	Elburn	Not hydric	flood-plain step, stream terrace	---
	Sawmill	Hydric	flood plain	2B3
7199A:				
Plano silt loam, 0 to 2 percent slopes, rarely flooded	Plano	Not hydric	flood-plain step, stream terrace	---
	Sawmill	Hydric	flood plain	2B3
7199B:				
Plano silt loam, 2 to 5 percent slopes, rarely flooded	Plano	Not hydric	flood-plain step, stream terrace	---
	Sawmill	Hydric	flood plain	2B3
7242A:				
Kendall silt loam, 0 to 2 percent slopes, rarely flooded	Kendall	Not hydric	flood-plain step, stream terrace	---
	Sawmill	Hydric	flood plain	2B3
7243B:				
St. Charles silt loam, 2 to 5 percent slopes, rarely flooded	St. Charles	Not hydric	flood-plain step, stream terrace	---
	Sawmill	Hydric	flood plain	2B3
8074A:				
Radford silt loam, 0 to 2 percent slopes, occasionally flooded	Radford	Not hydric	flood plain	---
	Sawmill	Hydric	swale	2B3
8107A:				
Sawmill silty clay loam, 0 to 2 percent slopes, occasionally flooded	Sawmill	Hydric	flood plain	2B3
8451A:				
Lawson silt loam, 0 to 2 percent slopes, occasionally flooded	Lawson	Not hydric	flood plain	---
	Sawmill	Hydric	swale	2B3
8720A:				
Aetna silt loam, 0 to 2 percent slopes, occasionally flooded	Aetna	Not hydric	flood plain	---
	Sawmill	Hydric	swale	2B3

Table 10.--Windbreaks and Environmental Plantings

(Absence of an entry indicates that trees generally do not grow to the given height)

Map symbol and soil name	Trees having predicted 20-year average height, in feet, of--				
	<8	8-15	16-25	26-35	>35
17A:					
Keomah	American cranberrybush, black chokeberry, buttonbush, common elderberry, common ninebark, common winterberry, gray dogwood, highbush blueberry, northern spicebush, redosier dogwood, silky dogwood	Cockspur hawthorn, hazel alder, nannyberry, roughleaf dogwood	Arborvitae, blackgum, common hackberry, green hawthorn, northern white-cedar, shingle oak	Red maple, river birch, swamp white oak, sweetgum	Carolina poplar, eastern cottonwood, pin oak
27D2:					
Miami	American cranberrybush, American hazelnut, black chokeberry, common chokecherry, common elderberry, common juniper, coralberry, mapleleaf viburnum, silky dogwood	American plum, bur oak, chinkapin oak, common serviceberry, eastern redcedar, nannyberry, prairie crabapple, roughleaf dogwood, smooth sumac	Black oak, common hackberry, eastern white pine	Carolina poplar	---
43A:					
Ipava	American cranberrybush, Canada yew, black chokeberry, common elderberry, common juniper, common ninebark, common winterberry, northern spicebush, redosier dogwood, silky dogwood	Blackhaw, cockspur hawthorn, common pawpaw, common serviceberry, prairie crabapple, roughleaf dogwood, rusty blackhaw, southern arrowwood, witchhazel	Austrian pine, Douglas fir, arborvitae, blue spruce, common persimmon, eastern redcedar, green hawthorn, nannyberry, pecan, shingle oak	Norway spruce, blackgum, common hackberry, red maple, swamp white oak, sweetgum	Carolina poplar, eastern cottonwood, pin oak

Table 10.--Windbreaks and Environmental Plantings--Continued

Map symbol and soil name	Trees having predicted 20-year average height, in feet, of--				
	<8	8-15	16-25	26-35	>35
45A:					
Denny	American cranberrybush, black chokeberry, buttonbush, common elderberry, common ninebark, common winterberry, gray dogwood, highbush blueberry, northern spicebush, redosier dogwood, silky dogwood	Cockspur hawthorn, hazel alder, nannyberry, roughleaf dogwood	Arborvitae, blackgum, common hackberry, green hawthorn, northern white-cedar, shingle oak	Red maple, river birch, swamp white oak, sweetgum	Carolina poplar, eastern cottonwood, pin oak
56B2:					
Dana	American hazelnut, black chokeberry, common winterberry, coralberry, gray dogwood, mapleleaf viburnum	American plum, American witchhazel, Arnold hawthorn, blackhaw, common chokecherry, common serviceberry, prairie crabapple	Douglas fir, arborvitae, black walnut, blackgum, blue spruce, bur oak, eastern redcedar, pecan	Norway spruce, common hackberry, pin oak, tuliptree	Carolina poplar, eastern white pine
67A:					
Harpster	Common winterberry, gray dogwood, redosier dogwood	Common pawpaw, nannyberry, roughleaf dogwood, silky dogwood	Arborvitae, bur oak, common hackberry, eastern redcedar, green hawthorn	Carolina poplar, eastern cottonwood	---
68A:					
Sable	American cranberrybush, black chokeberry, buttonbush, common elderberry, common ninebark, common winterberry, gray dogwood, highbush blueberry, northern spicebush, redosier dogwood, silky dogwood	Cockspur hawthorn, hazel alder, nannyberry, roughleaf dogwood	Arborvitae, blackgum, common hackberry, green hawthorn, northern white-cedar, shingle oak	Red maple, river birch, swamp white oak, sweetgum	Carolina poplar, eastern cottonwood, pin oak

Table 10.--Windbreaks and Environmental Plantings--Continued

Map symbol and soil name	Trees having predicted 20-year average height, in feet, of-- <8	8-15	16-25	26-35	>35
86B:					
Osco	American hazelnut, black chokeberry, common elderberry, common juniper, common ninebark, common winterberry, coralberry, mapleleaf viburnum, redosier dogwood, silky dogwood	American plum, American witchhazel, blackhaw, common chokecherry, common serviceberry, prairie crabapple, roughleaf dogwood, smooth sumac, southern arrowwood	Washington hawthorn, arborvitae, blue spruce, common persimmon, eastern redcedar, nannyberry, pecan, white oak	Douglas fir, Norway spruce, black walnut, blackgum, common hackberry, northern red oak, pin oak, tuliptree	Carolina poplar, eastern cottonwood, eastern white pine
134C2:					
Camden	American hazelnut, black chokeberry, common elderberry, common juniper, common ninebark, common winterberry, coralberry, mapleleaf viburnum, redosier dogwood, silky dogwood	American plum, American witchhazel, blackhaw, common chokecherry, common serviceberry, prairie crabapple, roughleaf dogwood, smooth sumac, southern arrowwood	Washington hawthorn, arborvitae, blue spruce, common persimmon, eastern redcedar, nannyberry, pecan, white oak	Douglas fir, Norway spruce, black walnut, blackgum, common hackberry, northern red oak, pin oak, tuliptree	Carolina poplar, eastern cottonwood, eastern white pine
138A:					
Shiloh	American cranberrybush, black chokeberry, buttonbush, common elderberry, common ninebark, common winterberry, gray dogwood, highbush blueberry, northern spicebush, redosier dogwood, silky dogwood	Cockspur hawthorn, hazel alder, nannyberry, roughleaf dogwood	Arborvitae, blackgum, common hackberry, green hawthorn, northern white-cedar, shingle oak	Red maple, river birch, swamp white oak, sweetgum	Carolina poplar, eastern cottonwood, pin oak
148B2:					
Proctor	American hazelnut, black chokeberry, common elderberry, common juniper, common ninebark, common winterberry, coralberry, mapleleaf viburnum, redosier dogwood, silky dogwood	American plum, American witchhazel, blackhaw, common chokecherry, common serviceberry, prairie crabapple, roughleaf dogwood, smooth sumac, southern arrowwood	Washington hawthorn, arborvitae, blue spruce, common persimmon, eastern redcedar, nannyberry, pecan, white oak	Douglas fir, Norway spruce, black walnut, blackgum, common hackberry, northern red oak, pin oak, tuliptree	Carolina poplar, eastern cottonwood, eastern white pine

Table 10.--Windbreaks and Environmental Plantings--Continued

Map symbol and soil name	Trees having predicted 20-year average height, in feet, of--				
	<8	8-15	16-25	26-35	>35
171B:					
Catlin-----------------	American hazelnut, black chokeberry, common elderberry, common juniper, common ninebark, common winterberry, coralberry, mapleleaf viburnum, redosier dogwood, silky dogwood	American plum, American witchhazel, blackhaw, common chokecherry, common serviceberry, prairie crabapple, roughleaf dogwood, smooth sumac, southern arrowwood	Washington hawthorn, arborvitae, blue spruce, common persimmon, eastern redcedar, nannyberry, pecan, white oak	Douglas fir, Norway spruce, black walnut, blackgum, common hackberry, northern red oak, pin oak, tuliptree	Carolina poplar, eastern cottonwood, eastern white pine
171B2:					
Catlin-----------------	American hazelnut, black chokeberry, common elderberry, common juniper, common ninebark, common winterberry, coralberry, mapleleaf viburnum, redosier dogwood, silky dogwood	American plum, American witchhazel, blackhaw, common chokecherry, common serviceberry, prairie crabapple, roughleaf dogwood, smooth sumac, southern arrowwood	Washington hawthorn, arborvitae, blue spruce, common persimmon, eastern redcedar, nannyberry, pecan, white oak	Douglas fir, Norway spruce, black walnut, blackgum, common hackberry, northern red oak, pin oak, tuliptree	Carolina poplar, eastern cottonwood, eastern white pine
171C2:					
Catlin-----------------	American hazelnut, black chokeberry, common elderberry, common juniper, common ninebark, common winterberry, coralberry, mapleleaf viburnum, redosier dogwood, silky dogwood	American plum, American witchhazel, blackhaw, common chokecherry, common serviceberry, prairie crabapple, roughleaf dogwood, smooth sumac, southern arrowwood	Washington hawthorn, arborvitae, blue spruce, common persimmon, eastern redcedar, nannyberry, pecan, white oak	Douglas fir, Norway spruce, black walnut, blackgum, common hackberry, northern red oak, pin oak, tuliptree	Carolina poplar, eastern cottonwood, eastern white pine
198A:					
Elburn-----------------	American cranberrybush, Canada yew, black chokeberry, common elderberry, common juniper, common ninebark, common winterberry, northern spicebush, redosier dogwood, silky dogwood	Blackhaw, cockspur hawthorn, common pawpaw, common serviceberry, prairie crabapple, roughleaf dogwood, rusty blackhaw, southern arrowwood, witchhazel	Austrian pine, Douglas fir, arborvitae, blue spruce, common persimmon, eastern redcedar, green hawthorn, nannyberry, pecan, shingle oak	Norway spruce, blackgum, common hackberry, red maple, swamp white oak, sweetgum	Carolina poplar, eastern cottonwood, pin oak

Table 10.--Windbreaks and Environmental Plantings--Continued

Map symbol and soil name	Trees having predicted 20-year average height, in feet, of-- <8	8-15	16-25	26-35	>35
199A:					
Plano	American hazelnut, black chokeberry, common elderberry, common juniper, common ninebark, common winterberry, coralberry, mapleleaf viburnum, redosier dogwood, silky dogwood	American plum, American witchhazel, blackhaw, common chokecherry, common serviceberry, prairie crabapple, roughleaf dogwood, smooth sumac, southern arrowwood	Washington hawthorn, arborvitae, blue spruce, common persimmon, eastern redcedar, nannyberry, pecan, white oak	Douglas fir, Norway spruce, black walnut, blackgum, common hackberry, northern red oak, pin oak, tuliptree	Carolina poplar, eastern cottonwood, eastern white pine
199B2:					
Plano	American hazelnut, black chokeberry, common elderberry, common juniper, common ninebark, common winterberry, coralberry, mapleleaf viburnum, redosier dogwood, silky dogwood	American plum, American witchhazel, blackhaw, common chokecherry, common serviceberry, prairie crabapple, roughleaf dogwood, smooth sumac, southern arrowwood	Washington hawthorn, arborvitae, blue spruce, common persimmon, eastern redcedar, nannyberry, pecan, white oak	Douglas fir, Norway spruce, black walnut, blackgum, common hackberry, northern red oak, pin oak, tuliptree	Carolina poplar, eastern cottonwood, eastern white pine
233B:					
Birkbeck	American hazelnut, black chokeberry, common elderberry, common juniper, common ninebark, common winterberry, coralberry, mapleleaf viburnum, redosier dogwood, silky dogwood	American plum, American witchhazel, blackhaw, common chokecherry, common serviceberry, prairie crabapple, roughleaf dogwood, smooth sumac, southern arrowwood	Washington hawthorn, arborvitae, blue spruce, common persimmon, eastern redcedar, nannyberry, pecan, white oak	Douglas fir, Norway spruce, black walnut, blackgum, common hackberry, northern red oak, pin oak, tuliptree	Carolina poplar, eastern cottonwood, eastern white pine
233C2:					
Birkbeck	American hazelnut, black chokeberry, common elderberry, common juniper, common ninebark, common winterberry, coralberry, mapleleaf viburnum, redosier dogwood, silky dogwood	American plum, American witchhazel, blackhaw, common chokecherry, common serviceberry, prairie crabapple, roughleaf dogwood, smooth sumac, southern arrowwood	Washington hawthorn, arborvitae, blue spruce, common persimmon, eastern redcedar, nannyberry, pecan, white oak	Douglas fir, Norway spruce, black walnut, blackgum, common hackberry, northern red oak, pin oak, tuliptree	Carolina poplar, eastern cottonwood, eastern white pine

Table 10.--Windbreaks and Environmental Plantings--Continued

Map symbol and soil name	Trees having predicted 20-year average height, in feet, of--				
	<8	8-15	16-25	26-35	>35
243B:					
St. Charles	American hazelnut, black chokeberry, common elderberry, common juniper, common ninebark, common winterberry, coralberry, mapleleaf viburnum, redosier dogwood, silky dogwood	American plum, American witchhazel, blackhaw, common chokecherry, common serviceberry, prairie crabapple, roughleaf dogwood, smooth sumac, southern arrowwood	Washington hawthorn, arborvitae, blue spruce, common persimmon, eastern redcedar, nannyberry, pecan, white oak	Douglas fir, Norway spruce, black walnut, blackgum, common hackberry, northern red oak, pin oak, tuliptree	Carolina poplar, eastern cottonwood, eastern white pine
244A:					
Hartsburg	Common winterberry, gray dogwood, redosier dogwood	Common pawpaw, nannyberry, roughleaf dogwood, silky dogwood	Arborvitae, bur oak, common hackberry, eastern redcedar, green hawthorn	Carolina poplar, eastern cottonwood	---
272A:					
Edgington	American cranberrybush, black chokeberry, buttonbush, common elderberry, common ninebark, common winterberry, gray dogwood, highbush blueberry, northern spicebush, redosier dogwood, silky dogwood	Cockspur hawthorn, hazel alder, nannyberry, roughleaf dogwood	Arborvitae, blackgum, common hackberry, green hawthorn, northern white-cedar, shingle oak	Red maple, river birch, swamp white oak, sweetgum	Carolina poplar, eastern cottonwood, pin oak
279B:					
Rozetta	American hazelnut, black chokeberry, common elderberry, common juniper, common ninebark, common winterberry, coralberry, mapleleaf viburnum, redosier dogwood, silky dogwood	American plum, American witchhazel, blackhaw, common chokecherry, common serviceberry, prairie crabapple, roughleaf dogwood, smooth sumac, southern arrowwood	Washington hawthorn, arborvitae, blue spruce, common persimmon, eastern redcedar, nannyberry, pecan, white oak	Douglas fir, Norway spruce, black walnut, blackgum, common hackberry, northern red oak, pin oak, tuliptree	Carolina poplar, eastern cottonwood, eastern white pine

Table 10.--Windbreaks and Environmental Plantings--Continued

Map symbol and soil name	Trees having predicted 20-year average height, in feet, of-- <8	8-15	16-25	26-35	>35
279B2: Rozetta	American hazelnut, black chokeberry, common elderberry, common juniper, common ninebark, common winterberry, coralberry, mapleleaf viburnum, redosier dogwood, silky dogwood	American plum, American witchhazel, blackhaw, common chokecherry, common serviceberry, prairie crabapple, roughleaf dogwood, smooth sumac, southern arrowwood	Washington hawthorn, arborvitae, blue spruce, common persimmon, eastern redcedar, nannyberry, pecan, white oak	Douglas fir, Norway spruce, black walnut, blackgum, common hackberry, northern red oak, pin oak, tuliptree	Carolina poplar, eastern cottonwood, eastern white pine
322C2: Russell	American hazelnut, black chokeberry, common winterberry, coralberry, gray dogwood, mapleleaf viburnum	American plum, American witchhazel, Arnold hawthorn, blackhaw, common chokecherry, common serviceberry, prairie crabapple	Douglas fir, arborvitae, black walnut, blackgum, blue spruce, bur oak, eastern redcedar, pecan	Norway spruce, common hackberry, pin oak, tuliptree	Carolina poplar, eastern white pine
322D3: Russell	American hazelnut, black chokeberry, common winterberry, coralberry, gray dogwood, mapleleaf viburnum	American plum, American witchhazel, Arnold hawthorn, blackhaw, common chokecherry, common serviceberry, prairie crabapple	Douglas fir, arborvitae, black walnut, blackgum, blue spruce, bur oak, eastern redcedar, pecan	Norway spruce, common hackberry, pin oak, tuliptree	Carolina poplar, eastern white pine
330A: Peotone	American cranberrybush, black chokeberry, buttonbush, common elderberry, common ninebark, common winterberry, gray dogwood, highbush blueberry, northern spicebush, redosier dogwood, silky dogwood	Cockspur hawthorn, hazel alder, nannyberry, roughleaf dogwood	Arborvitae, blackgum, common hackberry, green hawthorn, northern white-cedar, shingle oak	Red maple, river birch, swamp white oak, sweetgum	Carolina poplar, eastern cottonwood, pin oak
533. Urban land					

Table 10.--Windbreaks and Environmental Plantings--Continued

Map symbol and soil name	Trees having predicted 20-year average height, in feet, of-- <8	8-15	16-25	26-35	>35
618F: Senachwine	American hazelnut, black chokeberry, common winterberry, coralberry, gray dogwood, mapleleaf viburnum	American plum, American witchhazel, Arnold hawthorn, blackhaw, common chokecherry, common serviceberry, prairie crabapple	Douglas fir, arborvitae, blackgum, blue spruce, bur oak, eastern redcedar, pecan	Norway spruce, common hackberry, pin oak, tuliptree	Carolina poplar, eastern white pine
618G: Senachwine	American hazelnut, black chokeberry, common winterberry, coralberry, gray dogwood, mapleleaf viburnum	American plum, American witchhazel, Arnold hawthorn, blackhaw, common chokecherry, common serviceberry, prairie crabapple	Douglas fir, arborvitae, blackgum, blue spruce, bur oak, eastern redcedar, pecan	Norway spruce, common hackberry, pin oak, tuliptree	Carolina poplar, eastern white pine
622C2: Wyanet	American hazelnut, black chokeberry, common winterberry, coralberry, gray dogwood, mapleleaf viburnum	American plum, American witchhazel, Arnold hawthorn, blackhaw, common chokecherry, common serviceberry, prairie crabapple	Douglas fir, arborvitae, black walnut, blackgum, blue spruce, bur oak, eastern redcedar, pecan	Norway spruce, common hackberry, pin oak, tuliptree	Carolina poplar, eastern white pine
667B: Kaneville	American hazelnut, black chokeberry, common elderberry, common juniper, common ninebark, common winterberry, coralberry, mapleleaf viburnum, redosier dogwood, silky dogwood	American plum, American witchhazel, blackhaw, common chokecherry, common serviceberry, prairie crabapple, roughleaf dogwood, smooth sumac, southern arrowwood	Washington hawthorn, arborvitae, blue spruce, common persimmon, eastern redcedar, nannyberry, pecan, white oak	Douglas fir, Norway spruce, black walnut, blackgum, common hackberry, northern red oak, pin oak, tuliptree	Carolina poplar, eastern cottonwood, eastern white pine

Table 10.--Windbreaks and Environmental Plantings--Continued

Map symbol and soil name	Trees having predicted 20-year average height, in feet, of-- <8	8-15	16-25	26-35	>35
726A:					
Elburn, sandy substratum	American cranberrybush, Canada yew, black chokeberry, common elderberry, common juniper, common ninebark, common winterberry, northern spicebush, redosier dogwood, silky dogwood	Blackhaw, cockspur hawthorn, common pawpaw, common serviceberry, prairie crabapple, roughleaf dogwood, rusty blackhaw, southern arrowwood, witchhazel	Austrian pine, Douglas fir, arborvitae, blue spruce, common persimmon, eastern redcedar, green hawthorn, nannyberry, pecan, shingle oak	Norway spruce, blackgum, common hackberry, red maple, swamp white oak, sweetgum	Carolina poplar, eastern cottonwood, pin oak
737B:					
Tama, very deep to sand	American hazelnut, black chokeberry, common elderberry, common juniper, common ninebark, common winterberry, coralberry, mapleleaf viburnum, redosier dogwood, silky dogwood	American plum, American witchhazel, blackhaw, common chokecherry, common serviceberry, prairie crabapple, roughleaf dogwood, smooth sumac, southern arrowwood	Washington hawthorn, arborvitae, blue spruce, common persimmon, eastern redcedar, nannyberry, pecan, white oak	Douglas fir, Norway spruce, black walnut, blackgum, common hackberry, northern red oak, pin oak, tuliptree	Carolina poplar, eastern cottonwood, eastern white pine
748A:					
Plano, sandy substratum	American hazelnut, black chokeberry, common elderberry, common juniper, common ninebark, common winterberry, coralberry, mapleleaf viburnum, redosier dogwood, silky dogwood	American plum, American witchhazel, blackhaw, common chokecherry, common serviceberry, prairie crabapple, roughleaf dogwood, smooth sumac, southern arrowwood	Washington hawthorn, arborvitae, blue spruce, common persimmon, eastern redcedar, nannyberry, pecan, white oak	Douglas fir, Norway spruce, black walnut, blackgum, common hackberry, northern red oak, pin oak, tuliptree	Carolina poplar, eastern cottonwood, eastern white pine
748B:					
Plano, sandy substratum	American hazelnut, black chokeberry, common elderberry, common juniper, common ninebark, common winterberry, coralberry, mapleleaf viburnum, redosier dogwood, silky dogwood	American plum, American witchhazel, blackhaw, common chokecherry, common serviceberry, prairie crabapple, roughleaf dogwood, smooth sumac, southern arrowwood	Washington hawthorn, arborvitae, blue spruce, common persimmon, eastern redcedar, nannyberry, pecan, white oak	Douglas fir, Norway spruce, black walnut, blackgum, common hackberry, northern red oak, pin oak, tuliptree	Carolina poplar, eastern cottonwood, eastern white pine

Table 10.--Windbreaks and Environmental Plantings--Continued

Map symbol and soil name	Trees having predicted 20-year average height, in feet, of-- <8	8-15	16-25	26-35	>35
749B: Buckhart, till substratum	American hazelnut, black chokeberry, common elderberry, common juniper, common ninebark, common winterberry, coralberry, mapleleaf viburnum, redosier dogwood, silky dogwood	American plum, American witchhazel, blackhaw, common chokecherry, common serviceberry, prairie crabapple, roughleaf dogwood, smooth sumac, southern arrowwood	Washington hawthorn, arborvitae, blue spruce, common persimmon, eastern redcedar, nannyberry, pecan, white oak	Douglas fir, Norway spruce, black walnut, blackgum, common hackberry, northern red oak, pin oak, tuliptree	Carolina poplar, eastern cottonwood, eastern white pine
802B: Orthents, loamy	American cranberrybush, American hazelnut, black chokeberry, common juniper, coralberry, gray dogwood, mapleleaf viburnum, silky dogwood	American plum, American witchhazel, Washington hawthorn, blackhaw, common chokecherry, common serviceberry, nannyberry, prairie crabapple, roughleaf dogwood, staghorn sumac	Virginia pine, arborvitae, black oak, blackgum, bur oak, chinkapin oak, common hackberry, eastern redcedar	Norway spruce	Carolina poplar
802D: Orthents, loamy	American cranberrybush, American hazelnut, black chokeberry, common juniper, coralberry, gray dogwood, mapleleaf viburnum, silky dogwood	American plum, American witchhazel, Washington hawthorn, blackhaw, common chokecherry, common serviceberry, nannyberry, prairie crabapple, roughleaf dogwood, staghorn sumac	Virginia pine, arborvitae, black oak, blackgum, bur oak, chinkapin oak, common hackberry, eastern redcedar	Norway spruce	Carolina poplar
865. Pits, gravel					

Table 10.--Windbreaks and Environmental Plantings--Continued

Map symbol and soil name	Trees having predicted 20-year average height, in feet, of-- <8	8-15	16-25	26-35	>35
964F:					
Miami	American cranberrybush, American hazelnut, black chokeberry, common chokecherry, common elderberry, common juniper, coralberry, mapleleaf viburnum, silky dogwood	American plum, bur oak, chinkapin oak, common serviceberry, eastern redcedar, nannyberry, prairie crabapple, roughleaf dogwood, smooth sumac	Black oak, common hackberry, eastern white pine	Carolina poplar	---
Hennepin	American plum, black chokeberry, blackhaw, common juniper, gray dogwood, mapleleaf viburnum	Cockspur hawthorn, common serviceberry, eastern redcedar, nannyberry, prairie crabapple	Bur oak, chinkapin oak, thornless honeylocust	---	---
3073A:					
Ross	American cranberrybush, Canada yew, black chokeberry, common elderberry, common juniper, common ninebark, common winterberry, northern spicebush, redosier dogwood, silky dogwood	Blackhaw, cockspur hawthorn, common pawpaw, common serviceberry, prairie crabapple, roughleaf dogwood, rusty blackhaw, southern arrowwood, witchhazel	Austrian pine, Douglas fir, arborvitae, blue spruce, common persimmon, eastern redcedar, green hawthorn, nannyberry, pecan, shingle oak	Norway spruce, blackgum, common hackberry, red maple, swamp white oak, sweetgum	Carolina poplar, eastern cottonwood, pin oak
3107A:					
Sawmill	American cranberrybush, black chokeberry, buttonbush, common elderberry, common ninebark, common winterberry, gray dogwood, highbush blueberry, northern spicebush, redosier dogwood, silky dogwood	Cockspur hawthorn, hazel alder, nannyberry, roughleaf dogwood	Arborvitae, blackgum, common hackberry, green hawthorn, northern white-cedar, shingle oak	Red maple, river birch, swamp white oak, sweetgum	Carolina poplar, eastern cottonwood, pin oak

Table 10.--Windbreaks and Environmental Plantings--Continued

Map symbol and soil name	Trees having predicted 20-year average height, in feet, of-- <8	8-15	16-25	26-35	>35
3451A:					
Lawson	American cranberrybush, Canada yew, black chokeberry, common elderberry, common juniper, common ninebark, common winterberry, northern spicebush, redosier dogwood, silky dogwood	Blackhaw, cockspur hawthorn, common pawpaw, common serviceberry, prairie crabapple, roughleaf dogwood, rusty blackhaw, southern arrowwood, witchhazel	Austrian pine, Douglas fir, arborvitae, blue spruce, common persimmon, eastern redcedar, green hawthorn, nannyberry, pecan, shingle oak	Norway spruce, blackgum, common hackberry, red maple, swamp white oak, sweetgum	Carolina poplar, eastern cottonwood, pin oak
7134C:					
Camden	American hazelnut, black chokeberry, common elderberry, common juniper, common ninebark, common winterberry, coralberry, mapleleaf viburnum, redosier dogwood, silky dogwood	American plum, American witchhazel, blackhaw, common chokecherry, common serviceberry, prairie crabapple, roughleaf dogwood, smooth sumac, southern arrowwood	Washington hawthorn, arborvitae, blue spruce, common persimmon, eastern redcedar, nannyberry, pecan, white oak	Douglas fir, Norway spruce, black walnut, blackgum, common hackberry, northern red oak, pin oak, tuliptree	Carolina poplar, eastern cottonwood, eastern white pine
7148B:					
Proctor	American cranberrybush, Canada yew, black chokeberry, common elderberry, common juniper, common ninebark, common winterberry, northern spicebush, redosier dogwood, silky dogwood	Blackhaw, cockspur hawthorn, common pawpaw, common serviceberry, prairie crabapple, roughleaf dogwood, rusty blackhaw, southern arrowwood, witchhazel	Austrian pine, Douglas fir, arborvitae, blue spruce, common persimmon, eastern redcedar, green hawthorn, nannyberry, pecan, shingle oak	Norway spruce, blackgum, common hackberry, red maple, swamp white oak, sweetgum	Carolina poplar, eastern cottonwood, pin oak

Table 10.--Windbreaks and Environmental Plantings--Continued

Map symbol and soil name	Trees having predicted 20-year average height, in feet, of-- <8	8-15	16-25	26-35	>35
7198A:					
Elburn	American cranberrybush, Canada yew, black chokeberry, common elderberry, common juniper, common ninebark, common winterberry, northern spicebush, redosier dogwood, silky dogwood	Blackhaw, cockspur hawthorn, common pawpaw, common serviceberry, prairie crabapple, roughleaf dogwood, rusty blackhaw, southern arrowwood, witchhazel	Austrian pine, Douglas fir, arborvitae, blue spruce, common persimmon, eastern redcedar, green hawthorn, nannyberry, pecan, shingle oak	Norway spruce, blackgum, common hackberry, red maple, swamp white oak, sweetgum	Carolina poplar, eastern cottonwood, pin oak
7199A:					
Plano	American cranberrybush, Canada yew, black chokeberry, common elderberry, common juniper, common ninebark, common winterberry, northern spicebush, redosier dogwood, silky dogwood	Blackhaw, cockspur hawthorn, common pawpaw, common serviceberry, prairie crabapple, roughleaf dogwood, rusty blackhaw, southern arrowwood, witchhazel	Austrian pine, Douglas fir, arborvitae, blue spruce, common persimmon, eastern redcedar, green hawthorn, nannyberry, pecan, shingle oak	Norway spruce, blackgum, common hackberry, red maple, swamp white oak, sweetgum	Carolina poplar, eastern cottonwood, pin oak
7199B:					
Plano	American hazelnut, black chokeberry, common elderberry, common juniper, common ninebark, common winterberry, coralberry, mapleleaf viburnum, redosier dogwood, silky dogwood	American plum, American witchhazel, blackhaw, common chokecherry, common serviceberry, prairie crabapple, roughleaf dogwood, smooth sumac, southern arrowwood	Washington hawthorn, arborvitae, blue spruce, common persimmon, eastern redcedar, nannyberry, pecan, white oak	Douglas fir, Norway spruce, black walnut, blackgum, common hackberry, northern red oak, pin oak, tuliptree	Carolina poplar, eastern cottonwood, eastern white pine

Table 10.--Windbreaks and Environmental Plantings--Continued

Map symbol and soil name	Trees having predicted 20-year average height, in feet, of-- <8	8-15	16-25	26-35	>35
7242A: Kendall	American cranberrybush, Canada yew, black chokeberry, common elderberry, common juniper, common ninebark, common winterberry, northern spicebush, redosier dogwood, silky dogwood	Blackhaw, cockspur hawthorn, common pawpaw, common serviceberry, prairie crabapple, roughleaf dogwood, rusty blackhaw, southern arrowwood, witchhazel	Austrian pine, Douglas fir, arborvitae, blue spruce, common persimmon, eastern redcedar, green hawthorn, nannyberry, pecan, shingle oak	Norway spruce, blackgum, common hackberry, red maple, swamp white oak, sweetgum	Carolina poplar, eastern cottonwood, pin oak
7243B: St. Charles	American hazelnut, black chokeberry, common elderberry, common juniper, common ninebark, common winterberry, coralberry, mapleleaf viburnum, redosier dogwood, silky dogwood	American plum, American witchhazel, blackhaw, common chokecherry, common serviceberry, prairie crabapple, roughleaf dogwood, smooth sumac, southern arrowwood	Washington hawthorn, arborvitae, blue spruce, common persimmon, eastern redcedar, nannyberry, pecan, white oak	Douglas fir, Norway spruce, black walnut, blackgum, common hackberry, northern red oak, pin oak, tuliptree	Carolina poplar, eastern cottonwood, eastern white pine
8074A: Radford	American cranberrybush, Canada yew, black chokeberry, common elderberry, common juniper, common ninebark, common winterberry, northern spicebush, redosier dogwood, silky dogwood	Blackhaw, cockspur hawthorn, common pawpaw, common serviceberry, prairie crabapple, roughleaf dogwood, rusty blackhaw, southern arrowwood, witchhazel	Austrian pine, Douglas fir, arborvitae, blue spruce, common persimmon, eastern redcedar, green hawthorn, nannyberry, pecan, shingle oak	Norway spruce, blackgum, common hackberry, red maple, swamp white oak, sweetgum	Carolina poplar, eastern cottonwood, pin oak

Table 10.--Windbreaks and Environmental Plantings--Continued

Map symbol and soil name	Trees having predicted 20-year average height, in feet, of-- <8	8-15	16-25	26-35	>35
8107A:					
Sawmill	American cranberrybush, black chokeberry, buttonbush, common elderberry, common ninebark, common winterberry, gray dogwood, highbush blueberry, northern spicebush, redosier dogwood, silky dogwood	Cockspur hawthorn, hazel alder, nannyberry, roughleaf dogwood	Arborvitae, blackgum, common hackberry, green hawthorn, northern white-cedar, shingle oak	Red maple, river birch, swamp white oak, sweetgum	Carolina poplar, eastern cottonwood, pin oak
8451A:					
Lawson	American cranberrybush, Canada yew, black chokeberry, common elderberry, common juniper, common ninebark, common winterberry, northern spicebush, redosier dogwood, silky dogwood	Blackhaw, cockspur hawthorn, common pawpaw, common serviceberry, prairie crabapple, roughleaf dogwood, rusty blackhaw, southern arrowwood, witchhazel	Austrian pine, Douglas fir, arborvitae, blue spruce, common persimmon, eastern redcedar, green hawthorn, nannyberry, pecan, shingle oak	Norway spruce, blackgum, common hackberry, red maple, swamp white oak, sweetgum	Carolina poplar, eastern cottonwood, pin oak
8720A:					
Aetna	American cranberrybush, Canada yew, black chokeberry, common elderberry, common juniper, common ninebark, common winterberry, northern spicebush, redosier dogwood, silky dogwood	Blackhaw, cockspur hawthorn, common pawpaw, common serviceberry, prairie crabapple, roughleaf dogwood, rusty blackhaw, southern arrowwood, witchhazel	Austrian pine, Douglas fir, arborvitae, blue spruce, common persimmon, eastern redcedar, green hawthorn, nannyberry, pecan, shingle oak	Norway spruce, blackgum, common hackberry, red maple, swamp white oak, sweetgum	Carolina poplar, eastern cottonwood, pin oak

Table 11.--Forestland Productivity

(Only the soils suitable and likely to be available for production of commercial trees are listed)

Map symbol and soil name	Potential productivity: Common trees	Site index	Volume of wood fiber	Suggested trees to plant
			cu ft/ac	
17A:				
Keomah	Northern red oak	70	57	Common hackberry, eastern cottonwood, pin oak, river birch, swamp white oak, sweetgum.
	White oak	65	43	
27D2:				
Miami	Sweetgum	76	72	Black oak, common hackberry, eastern white pine.
	Tuliptree	98	100	
	White oak	90	72	
45A:				
Denny	---	---	---	Common hackberry, eastern cottonwood, pin oak, river birch, swamp white oak, sweetgum.
134C2:				
Camden	Northern red oak	85	72	Black walnut, eastern cottonwood, eastern white pine, northern red oak, pecan, pin oak, tuliptree, white oak.
	White oak	85	72	
	Sweetgum	80	86	
	Tuliptree	95	100	
233B:				
Birkbeck	White oak	86	72	Black walnut, eastern cottonwood, eastern white pine, northern red oak, pecan, pin oak, tuliptree, white oak.
	Northern red oak	---	---	
233C2:				
Birkbeck	White oak	86	72	Black walnut, eastern cottonwood, eastern white pine, northern red oak, pecan, pin oak, tuliptree, white oak.
	Northern red oak	---	---	
243B:				
St. Charles	Northern red oak	85	72	Black walnut, eastern cottonwood, eastern white pine, northern red oak, pecan, pin oak, tuliptree, white oak.
	Sweetgum	---	---	
	Tuliptree	95	100	
	White oak	85	72	
279B:				
Rozetta	White oak	80	57	Black walnut, eastern cottonwood, eastern white pine, northern red oak, pecan, pin oak, tuliptree, white oak.
	Northern red oak	80	57	
	Tuliptree	90	86	
	Black walnut	---	---	
279B2:				
Rozetta	White oak	80	57	Black walnut, eastern cottonwood, eastern white pine, northern red oak, pecan, pin oak, tuliptree, white oak.
	Northern red oak	80	57	
	Tuliptree	90	86	
	Black walnut	---	---	

Table 11.--Forestland Productivity--Continued

Map symbol and soil name	Potential productivity: Common trees	Potential productivity: Site index	Potential productivity: Volume of wood fiber	Suggested trees to plant
			cu ft/ac	
322C2:				
Russell	White oak	90	72	Black walnut, bur oak, eastern white pine, pecan, pin oak, tuliptree.
	Northern red oak	90	72	
	Tuliptree	96	100	
322D3:				
Russell	White oak	90	72	Black walnut, bur oak, eastern white pine, pecan, pin oak, tuliptree.
	Northern red oak	90	72	
	Tuliptree	96	100	
618F:				
Senachwine	White oak	90	72	Black walnut, bur oak, eastern white pine, pecan, pin oak, tuliptree.
	Sweetgum	76	72	
	Tuliptree	98	100	
618G:				
Senachwine	White oak	90	72	Black walnut, bur oak, eastern white pine, pecan, pin oak, tuliptree.
	Sweetgum	76	72	
	Tuliptree	98	100	
667B:				
Kaneville	Northern red oak	85	72	Black walnut, eastern cottonwood, eastern white pine, northern red oak, pecan, pin oak, tuliptree, white oak.
	Sweetgum	---	---	
	Tuliptree	95	100	
	White oak	85	72	
802B:				
Orthents, loamy	---	---	---	Black oak, bur oak, chinkapin oak, common hackberry, eastern redcedar.
802D:				
Orthents, loamy	---	---	---	Black oak, bur oak, chinkapin oak, common hackberry, eastern redcedar.
964F:				
Miami	Sweetgum	76	72	Black oak, common hackberry, eastern white pine.
	Tuliptree	98	100	
	White oak	90	72	
Hennepin	Northern red oak	85	72	Bur oak, chinkapin oak, eastern redcedar, honeylocust.
	White oak	---	---	
3073A:				
Ross	Black cherry	---	---	Common hackberry, common persimmon, eastern cottonwood, pecan, pin oak, swamp white oak.
	Black walnut	---	---	
	Northern red oak	86	72	
	Sugar maple	85	57	
	Tuliptree	96	100	
	White ash	---	---	
	White oak	---	---	
3107A:				
Sawmill	Pin oak	90	72	Common hackberry, eastern cottonwood, pin oak, river birch, swamp white oak, sweetgum.
	American sycamore	---	---	
	Eastern cottonwood	---	---	
	Sweetgum	---	---	

Table 11.--Forestland Productivity--Continued

Map symbol and soil name	Potential productivity: Common trees	Site index	Volume of wood fiber	Suggested trees to plant
			cu ft/ac	
3451A:				
Lawson	White ash	---	---	Common hackberry, common persimmon, eastern cottonwood, pecan, pin oak, swamp white oak.
	Red maple	---	---	
	Silver maple	70	29	
7134C:				
Camden	Northern red oak	85	72	Black walnut, eastern cottonwood, eastern white pine, northern red oak, pecan, pin oak, tuliptree, white oak.
	White oak	85	72	
	Sweetgum	80	86	
	Tuliptree	95	100	
7148B:				
Proctor	---	---	---	Black walnut, eastern cottonwood, eastern white pine, northern red oak, pecan, pin oak, tuliptree, white oak.
7198A:				
Elburn	---	---	---	Common hackberry, common persimmon, eastern cottonwood, pecan, pin oak, swamp white oak.
7199A:				
Plano	---	---	---	Black walnut, eastern cottonwood, eastern white pine, northern red oak, pecan, pin oak, tuliptree, white oak.
7199B:				
Plano	---	---	---	Black walnut, eastern cottonwood, eastern white pine, northern red oak, pecan, pin oak, tuliptree, white oak.
7242A:				
Kendall	Black walnut	---	---	Common hackberry, common persimmon, eastern cottonwood, pecan, pin oak, swamp white oak.
	Northern red oak	80	57	
	Tuliptree	90	86	
	White oak	80	57	
7243B:				
St. Charles	Northern red oak	85	72	Black walnut, eastern cottonwood, eastern white pine, northern red oak, pecan, pin oak, tuliptree, white oak.
	Sweetgum	---	---	
	Tuliptree	95	100	
	White oak	85	72	
8074A:				
Radford	---	---	---	Common hackberry, common persimmon, eastern cottonwood, pecan, pin oak, swamp white oak.

Table 11.--Forestland Productivity--Continued

Map symbol and soil name	Potential productivity			Suggested trees to plant
	Common trees	Site index	Volume of wood fiber	
			cu ft/ac	
8107A:				
Sawmill	American sycamore	---	---	Common hackberry, eastern cottonwood, pin oak, river birch, swamp white oak, sweetgum.
	Cherrybark oak	---	---	
	Eastern cottonwood	---	---	
	Pin oak	90	72	
	Sweetgum	---	---	
8451A:				
Lawson	Silver maple	70	29	Common hackberry, common persimmon, eastern cottonwood, pecan, pin oak, swamp white oak.
	White ash	---	---	
8720A:				
Aetna	Red maple	---	---	Common hackberry, common persimmon, eastern cottonwood, pecan, pin oak, swamp white oak.
	Silver maple	80	29	
	White ash	---	---	

Table 12a.--Recreational Development

(The information in this table indicates the dominant soil condition but does not eliminate the need for onsite investigation. The numbers in the value columns range from 0.01 to 1.00. The larger the value, the greater the limitation. See text for further explanation of ratings in this table)

Map symbol and soil name	Camp areas		Picnic areas		Playgrounds	
	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
17A:						
Keomah	Very limited		Somewhat limited		Very limited	
	Depth to saturated zone	1.00	Slow water movement	0.96	Depth to saturated zone	1.00
	Slow water movement	0.96	Depth to saturated zone	0.94	Slow water movement	0.96
27D2:						
Miami	Somewhat limited		Somewhat limited		Very limited	
	Slope	0.96	Slope	0.96	Slope	1.00
	Depth to saturated zone	0.39	Slow water movement	0.21	Depth to saturated zone	0.39
	Slow water movement	0.21	Depth to saturated zone	0.19	Slow water movement	0.21
43A:						
Ipava	Somewhat limited		Somewhat limited		Somewhat limited	
	Depth to saturated zone	0.98	Depth to saturated zone	0.75	Depth to saturated zone	0.98
	Slow water movement	0.21	Slow water movement	0.21	Slow water movement	0.21
45A:						
Denny	Very limited		Very limited		Very limited	
	Depth to saturated zone	1.00	Ponding	1.00	Depth to saturated zone	1.00
	Ponding	1.00	Depth to saturated zone	1.00	Ponding	1.00
	Slow water movement	0.96	Slow water movement	0.96	Slow water movement	0.96
56B2:						
Dana	Somewhat limited		Somewhat limited		Somewhat limited	
	Depth to saturated zone	0.07	Depth to saturated zone	0.03	Slope	0.50
					Depth to saturated zone	0.07
67A:						
Harpster	Very limited		Very limited		Very limited	
	Depth to saturated zone	1.00	Ponding	1.00	Depth to saturated zone	1.00
	Ponding	1.00	Depth to saturated zone	1.00	Ponding	1.00
68A:						
Sable	Very limited		Very limited		Very limited	
	Depth to saturated zone	1.00	Ponding	1.00	Depth to saturated zone	1.00
	Ponding	1.00	Depth to saturated zone	1.00	Ponding	1.00
86B:						
Osco	Not limited		Not limited		Somewhat limited	
					Slope	0.28
134C2:						
Camden	Not limited		Not limited		Very limited	
					Slope	1.00

Table 12a.--Recreational Development--Continued

Map symbol and soil name	Camp areas: Rating class and limiting features	Value	Picnic areas: Rating class and limiting features	Value	Playgrounds: Rating class and limiting features	Value
138A:						
Shiloh	Very limited		Very limited		Very limited	
	Depth to saturated zone	1.00	Ponding	1.00	Depth to saturated zone	1.00
	Ponding	1.00	Depth to saturated zone	1.00	Ponding	1.00
	Slow water movement	0.21	Slow water movement	0.21	Slow water movement	0.21
148B2:						
Proctor	Not limited		Not limited		Somewhat limited	
					Slope	0.28
171B:						
Catlin	Not limited		Not limited		Somewhat limited	
					Slope	0.12
171B2:						
Catlin	Somewhat limited		Somewhat limited		Somewhat limited	
	Depth to saturated zone	0.98	Depth to saturated zone	0.75	Depth to saturated zone	0.98
					Slope	0.12
171C2:						
Catlin	Not limited		Not limited		Very limited	
					Slope	1.00
198A:						
Elburn	Somewhat limited		Somewhat limited		Somewhat limited	
	Depth to saturated zone	0.98	Depth to saturated zone	0.75	Depth to saturated zone	0.98
199A:						
Plano	Not limited		Not limited		Not limited	
199B2:						
Plano	Not limited		Not limited		Somewhat limited	
					Slope	0.28
233B:						
Birkbeck	Not limited		Not limited		Somewhat limited	
					Slope	0.28
233C2:						
Birkbeck	Somewhat limited		Somewhat limited		Very limited	
	Depth to saturated zone	0.28	Depth to saturated zone	0.14	Slope	1.00
					Depth to saturated zone	0.28
243B:						
St. Charles	Not limited		Not limited		Somewhat limited	
					Slope	0.28
244A:						
Hartsburg	Very limited		Very limited		Very limited	
	Depth to saturated zone	1.00	Ponding	1.00	Depth to saturated zone	1.00
	Ponding	1.00	Depth to saturated zone	1.00	Ponding	1.00

Table 12a.--Recreational Development--Continued

Map symbol and soil name	Camp areas: Rating class and limiting features	Camp areas: Value	Picnic areas: Rating class and limiting features	Picnic areas: Value	Playgrounds: Rating class and limiting features	Playgrounds: Value
272A:						
Edgington-----------	Very limited		Very limited		Very limited	
	Depth to saturated zone	1.00	Ponding	1.00	Depth to saturated zone	1.00
	Ponding	1.00	Depth to saturated zone	1.00	Ponding	1.00
	Slow water movement	0.21	Slow water movement	0.21	Slow water movement	0.21
279B:						
Rozetta-------------	Not limited		Not limited		Somewhat limited	
					Slope	0.28
279B2:						
Rozetta-------------	Not limited		Not limited		Somewhat limited	
					Slope	0.12
322C2:						
Russell-------------	Somewhat limited		Somewhat limited		Very limited	
	Slope	0.01	Slope	0.01	Slope	1.00
322D3:						
Russell-------------	Somewhat limited		Somewhat limited		Very limited	
	Slope	0.84	Slope	0.84	Slope	1.00
330A:						
Peotone-------------	Very limited		Very limited		Very limited	
	Depth to saturated zone	1.00	Ponding	1.00	Depth to saturated zone	1.00
	Ponding	1.00	Depth to saturated zone	1.00	Ponding	1.00
	Slow water movement	0.21	Slow water movement	0.21	Slow water movement	0.21
533:						
Urban land----------	Not rated		Not rated		Not rated	
618F:						
Senachwine----------	Very limited		Very limited		Very limited	
	Slope	1.00	Slope	1.00	Slope	1.00
618G:						
Senachwine----------	Very limited		Very limited		Very limited	
	Slope	1.00	Slope	1.00	Slope	1.00
	Slow water movement	0.21	Slow water movement	0.21	Slow water movement	0.21
622C2:						
Wyanet--------------	Somewhat limited		Somewhat limited		Very limited	
	Slow water movement	0.21	Slow water movement	0.21	Slope	1.00
					Slow water movement	0.21
667B:						
Kaneville-----------	Not limited		Not limited		Somewhat limited	
					Slope	0.12
726A:						
Elburn, sandy substratum---------	Somewhat limited		Somewhat limited		Somewhat limited	
	Depth to saturated zone	0.95	Depth to saturated zone	0.68	Depth to saturated zone	0.95

Table 12a.--Recreational Development--Continued

Map symbol and soil name	Camp areas		Picnic areas		Playgrounds	
	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
737B:						
Tama, very deep to sand----------------	Not limited		Not limited		Somewhat limited	
					Slope	0.28
748A:						
Plano, sandy substratum---------	Not limited		Not limited		Not limited	
748B:						
Plano, sandy substratum---------	Not limited		Not limited		Somewhat limited	
					Slope	0.12
749B:						
Buckhart, till substratum---------	Not limited		Not limited		Somewhat limited	
					Slope	0.28
802B:						
Orthents, loamy-----	Somewhat limited		Somewhat limited		Somewhat limited	
	Slow water movement	0.21	Slow water movement	0.21	Slope	0.50
					Slow water movement	0.21
802D:						
Orthents, loamy-----	Somewhat limited		Somewhat limited		Very limited	
	Slope	0.37	Slope	0.37	Slope	1.00
	Slow water movement	0.21	Slow water movement	0.21	Slow water movement	0.21
865:						
Pits, gravel--------	Not rated		Not rated		Not rated	
964F:						
Miami---------------	Very limited		Very limited		Very limited	
	Slope	1.00	Slope	1.00	Slope	1.00
	Depth to saturated zone	0.39	Slow water movement	0.21	Depth to saturated zone	0.39
	Slow water movement	0.21	Depth to saturated zone	0.19	Slow water movement	0.21
Hennepin------------	Very limited		Very limited		Very limited	
	Slope	1.00	Slope	1.00	Slope	1.00
	Slow water movement	0.21	Slow water movement	0.21	Slow water movement	0.21
3073A:						
Ross----------------	Very limited		Somewhat limited		Very limited	
	Flooding	1.00	Flooding	0.40	Flooding	1.00
3107A:						
Sawmill-------------	Very limited		Very limited		Very limited	
	Depth to saturated zone	1.00	Ponding	1.00	Depth to saturated zone	1.00
	Flooding	1.00	Depth to saturated zone	1.00	Flooding	1.00
	Ponding	1.00	Flooding	0.40	Ponding	1.00
3451A:						
Lawson--------------	Very limited		Somewhat limited		Very limited	
	Flooding	1.00	Flooding	0.40	Flooding	1.00

Table 12a.--Recreational Development--Continued

Map symbol and soil name	Camp areas: Rating class and limiting features	Camp areas: Value	Picnic areas: Rating class and limiting features	Picnic areas: Value	Playgrounds: Rating class and limiting features	Playgrounds: Value
7134C:						
Camden	Very limited		Not limited		Very limited	
	Flooding	1.00			Slope	1.00
7148B:						
Proctor	Very limited		Not limited		Somewhat limited	
	Flooding	1.00			Slope	0.28
7198A:						
Elburn	Very limited		Somewhat limited		Somewhat limited	
	Flooding	1.00	Depth to saturated zone	0.75	Depth to saturated zone	0.98
	Depth to saturated zone	0.98				
7199A:						
Plano	Very limited		Not limited		Not limited	
	Flooding	1.00				
7199B:						
Plano	Very limited		Not limited		Somewhat limited	
	Flooding	1.00			Slope	0.28
7242A:						
Kendall	Very limited		Somewhat limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	0.94	Depth to saturated zone	1.00
	Flooding	1.00				
7243B:						
St. Charles	Very limited		Not limited		Somewhat limited	
	Flooding	1.00			Slope	0.28
8074A:						
Radford	Very limited		Somewhat limited		Somewhat limited	
	Flooding	1.00	Depth to saturated zone	0.48	Depth to saturated zone	0.81
	Depth to saturated zone	0.81			Flooding	0.60
8107A:						
Sawmill	Very limited		Very limited		Very limited	
	Depth to saturated zone	1.00	Ponding	1.00	Depth to saturated zone	1.00
	Flooding	1.00	Depth to saturated zone	1.00	Ponding	1.00
	Ponding	1.00			Flooding	0.60
8451A:						
Lawson	Very limited		Somewhat limited		Somewhat limited	
	Flooding	1.00	Depth to saturated zone	0.75	Depth to saturated zone	0.98
	Depth to saturated zone	0.98			Flooding	0.60
8720A:						
Aetna	Very limited		Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Flooding	1.00			Flooding	0.60

Table 12b.--Recreational Development

(The information in this table indicates the dominant soil condition but does not eliminate the need for onsite investigation. The numbers in the value columns range from 0.01 to 1.00. The larger the value, the greater the limitation. See text for further explanation of ratings in this table)

Map symbol and soil name	Paths and trails		Off-road motorcycle trails		Golf fairways	
	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
17A:						
Keomah---------------	Somewhat limited		Somewhat limited		Somewhat limited	
	Depth to saturated zone	0.86	Depth to saturated zone	0.86	Depth to saturated zone	0.94
27D2:						
Miami----------------	Very limited		Very limited		Somewhat limited	
	Water erosion	1.00	Water erosion	1.00	Slope	0.96
					Depth to saturated zone	0.19
43A:						
Ipava----------------	Somewhat limited		Somewhat limited		Somewhat limited	
	Depth to saturated zone	0.44	Depth to saturated zone	0.44	Depth to saturated zone	0.75
45A:						
Denny----------------	Very limited		Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Ponding	1.00
	Ponding	1.00	Ponding	1.00	Depth to saturated zone	1.00
56B2:						
Dana-----------------	Not limited		Not limited		Somewhat limited	
					Depth to saturated zone	0.03
67A:						
Harpster-------------	Very limited		Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Ponding	1.00
	Ponding	1.00	Ponding	1.00	Depth to saturated zone	1.00
68A:						
Sable----------------	Very limited		Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Ponding	1.00
	Ponding	1.00	Ponding	1.00	Depth to saturated zone	1.00
86B:						
Osco-----------------	Not limited		Not limited		Not limited	
134C2:						
Camden---------------	Not limited		Not limited		Not limited	
138A:						
Shiloh---------------	Very limited		Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Ponding	1.00
	Ponding	1.00	Ponding	1.00	Depth to saturated zone	1.00
148B2:						
Proctor--------------	Not limited		Not limited		Not limited	

Table 12b.--Recreational Development--Continued

Map symbol and soil name	Paths and trails: Rating class and limiting features	Value	Off-road motorcycle trails: Rating class and limiting features	Value	Golf fairways: Rating class and limiting features	Value
171B:						
Catlin	Not limited		Not limited		Not limited	
171B2:						
Catlin	Somewhat limited		Somewhat limited		Somewhat limited	
	Depth to saturated zone	0.44	Depth to saturated zone	0.44	Depth to saturated zone	0.75
171C2:						
Catlin	Not limited		Not limited		Not limited	
198A:						
Elburn	Somewhat limited		Somewhat limited		Somewhat limited	
	Depth to saturated zone	0.44	Depth to saturated zone	0.44	Depth to saturated zone	0.75
199A:						
Plano	Not limited		Not limited		Not limited	
199B2:						
Plano	Not limited		Not limited		Not limited	
233B:						
Birkbeck	Not limited		Not limited		Not limited	
233C2:						
Birkbeck	Not limited		Not limited		Somewhat limited	
					Depth to saturated zone	0.14
243B:						
St. Charles	Not limited		Not limited		Not limited	
244A:						
Hartsburg	Very limited		Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Ponding	1.00
	Ponding	1.00	Ponding	1.00	Depth to saturated zone	1.00
272A:						
Edgington	Very limited		Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Ponding	1.00
	Ponding	1.00	Ponding	1.00	Depth to saturated zone	1.00
279B:						
Rozetta	Not limited		Not limited		Not limited	
279B2:						
Rozetta	Not limited		Not limited		Not limited	
322C2:						
Russell	Not limited		Not limited		Somewhat limited	
					Slope	0.01
322D3:						
Russell	Very limited		Very limited		Somewhat limited	
	Water erosion	1.00	Water erosion	1.00	Slope	0.84

Table 12b.--Recreational Development--Continued

Map symbol and soil name	Paths and trails: Rating class and limiting features	Value	Off-road motorcycle trails: Rating class and limiting features	Value	Golf fairways: Rating class and limiting features	Value
330A:						
Peotone	Very limited		Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Ponding	1.00
	Ponding	1.00	Ponding	1.00	Depth to saturated zone	1.00
533:						
Urban land	Not rated		Not rated		Not rated	
618F:						
Senachwine	Very limited		Very limited		Very limited	
	Water erosion	1.00	Water erosion	1.00	Slope	1.00
	Slope	1.00	Slope	0.04		
618G:						
Senachwine	Very limited		Very limited		Very limited	
	Slope	1.00	Water erosion	1.00	Slope	1.00
	Water erosion	1.00	Slope	1.00		
622C2:						
Wyanet	Not limited		Not limited		Not limited	
667B:						
Kaneville	Not limited		Not limited		Not limited	
726A:						
Elburn, sandy substratum	Somewhat limited		Somewhat limited		Somewhat limited	
	Depth to saturated zone	0.32	Depth to saturated zone	0.32	Depth to saturated zone	0.68
737B:						
Tama, very deep to sand	Not limited		Not limited		Not limited	
748A:						
Plano, sandy substratum	Not limited		Not limited		Not limited	
748B:						
Plano, sandy substratum	Not limited		Not limited		Not limited	
749B:						
Buckhart, till substratum	Not limited		Not limited		Not limited	
802B:						
Orthents, loamy	Not limited		Not limited		Not limited	
802D:						
Orthents, loamy	Very limited		Very limited		Somewhat limited	
	Water erosion	1.00	Water erosion	1.00	Slope	0.37
865:						
Pits, gravel	Not rated		Not rated		Not rated	

Table 12b.--Recreational Development--Continued

Map symbol and soil name	Paths and trails: Rating class and limiting features	Value	Off-road motorcycle trails: Rating class and limiting features	Value	Golf fairways: Rating class and limiting features	Value
964F:						
Miami	Somewhat limited		Not limited		Very limited	
	Slope	0.98			Slope	1.00
					Depth to saturated zone	0.19
Hennepin	Very limited		Very limited		Very limited	
	Water erosion	1.00	Water erosion	1.00	Slope	1.00
	Slope	1.00	Slope	0.04		
3073A:						
Ross	Somewhat limited		Somewhat limited		Very limited	
	Flooding	0.40	Flooding	0.40	Flooding	1.00
3107A:						
Sawmill	Very limited		Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Ponding	1.00
					Flooding	1.00
	Ponding	1.00	Ponding	1.00	Depth to saturated zone	1.00
	Flooding	0.40	Flooding	0.40		
3451A:						
Lawson	Somewhat limited		Somewhat limited		Very limited	
	Flooding	0.40	Flooding	0.40	Flooding	1.00
7134C:						
Camden	Not limited		Not limited		Not limited	
7148B:						
Proctor	Not limited		Not limited		Not limited	
7198A:						
Elburn	Somewhat limited		Somewhat limited		Somewhat limited	
	Depth to saturated zone	0.44	Depth to saturated zone	0.44	Depth to saturated zone	0.75
7199A:						
Plano	Not limited		Not limited		Not limited	
7199B:						
Plano	Not limited		Not limited		Not limited	
7242A:						
Kendall	Somewhat limited		Somewhat limited		Somewhat limited	
	Depth to saturated zone	0.86	Depth to saturated zone	0.86	Depth to saturated zone	0.94
7243B:						
St. Charles	Not limited		Not limited		Not limited	
8074A:						
Radford	Somewhat limited		Somewhat limited		Somewhat limited	
	Depth to saturated zone	0.11	Depth to saturated zone	0.11	Flooding	0.60
					Depth to saturated zone	0.48

Table 12b.--Recreational Development--Continued

Map symbol and soil name	Paths and trails		Off-road motorcycle trails		Golf fairways	
	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
8107A:						
Sawmill	Very limited		Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Ponding	1.00
	Ponding	1.00	Ponding	1.00	Depth to saturated zone	1.00
					Flooding	0.60
8451A:						
Lawson	Somewhat limited		Somewhat limited		Somewhat limited	
	Depth to saturated zone	0.44	Depth to saturated zone	0.44	Depth to saturated zone	0.75
					Flooding	0.60
8720A:						
Aetna	Very limited		Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
					Flooding	0.60

Table 13.--Wildlife Habitat

(See text for definitions of terms used in this table. Absence of an entry indicates that no rating is applicable)

Map symbol and soil name	Potential for habitat elements: Grain and seed crops	Grasses and legumes	Wild herbaceous plants	Hardwood trees	Coniferous plants	Wetland plants	Shallow water areas	Potential as habitat for--: Openland wildlife	Woodland wildlife	Wetland wildlife
17A: Keomah	Fair	Good	Fair	Good	Good	Fair	Fair	Good	Good	Fair
27D2: Miami	Fair	Good	Good	Good	Good	Very poor	Very poor	Good	Good	Very poor
43A: Ipava	Fair	Good	Good	Good	Good	Fair	Fair	Good	Good	Fair
45A: Denny	Fair	Fair	Fair	Fair	Poor	Good	Good	Fair	Fair	Good
56B2: Dana	Good	Good	Good	Good	Good	Poor	Very poor	Good	Good	Very poor
67A: Harpster	Fair	Fair	Fair	Fair	Poor	Good	Good	Fair	Fair	Good
68A: Sable	Fair	Fair	Fair	Fair	Poor	Good	Good	Fair	Fair	Good
86B: Osco	Good	Good	Good	Good	Good	Poor	Very poor	Good	Good	Very poor
134C2: Camden	Fair	Good	Good	Good	Good	Poor	Very poor	Good	Good	Very poor
138A: Shiloh	Poor	Poor	Poor	Poor	Very poor	Good	Good	Poor	Poor	Good
148B2: Proctor	Good	Good	Good	Good	Good	Poor	Very poor	Good	Good	Very poor
171B: Catlin	Good	Good	Good	Good	Good	Poor	Very poor	Good	Good	Very poor
171B2: Catlin	Good	Good	Good	Good	Good	Poor	Very poor	Good	Good	Very poor
171C2: Catlin	Fair	Good	Good	Good	Good	Poor	Very poor	Good	Good	Very poor
198A: Elburn	Fair	Good	Good	Good	Good	Fair	Fair	Good	Good	Fair
199A: Plano	Good	Good	Good	Good	Good	Poor	Very poor	Good	Good	Very poor

Table 13.--Wildlife Habitat--Continued

Map symbol and soil name	Potential for habitat elements: Grain and seed crops	Grasses and legumes	Wild herba- ceous plants	Hardwood trees	Conif- erous plants	Wetland plants	Shallow water areas	Potential as habitat for--: Openland wildlife	Woodland wildlife	Wetland wildlife
199B2:										
Plano-------------	Good	Good	Good	Good	Good	Poor	Very poor	Good	Good	Very poor
233B:										
Birkbeck----------	Good	Good	Good	Good	Good	Poor	Very poor	Good	Good	Very poor
233C2:										
Birkbeck----------	Fair	Good	Good	Good	Good	Poor	Very poor	Good	Good	Very poor
243B:										
St. Charles-------	Good	Good	Good	Good	Good	Poor	Very poor	Good	Good	Very poor
244A:										
Hartsburg---------	Fair	Fair	Fair	Fair	Poor	Good	Good	Fair	Fair	Good
272A:										
Edgington---------	Fair	Fair	Fair	Fair	Poor	Good	Good	Fair	Fair	Good
279B:										
Rozetta-----------	Good	Good	Good	Good	Good	Poor	Very poor	Good	Good	Very poor
279B2:										
Rozetta-----------	Good	Good	Good	Good	Good	Poor	Poor	Good	Good	Poor
322C2:										
Russell-----------	Fair	Good	Good	Good	Good	Poor	Very poor	Good	Good	Very poor
322D3:										
Russell-----------	Fair	Good	Good	Good	Good	Very poor	Very poor	Good	Good	Very poor
330A:										
Peotone-----------	Poor	Poor	Poor	Poor	Very poor	Good	Good	Poor	Poor	Good
533.										
Urban land										
618F:										
Senachwine--------	Very poor	Fair	Good	Good	Good	Very poor	Very poor	Fair	Good	Very poor
618G:										
Senachwine--------	Very poor	Poor	Good	Good	Good	Very poor	Very poor	Poor	Good	Very poor
622C2:										
Wyanet------------	Fair	Good	Good	Good	Good	Poor	Very poor	Good	Good	Very poor
667B:										
Kaneville---------	Good	Good	Good	Good	Good	Poor	Very poor	Good	Good	Very poor

Table 13.--Wildlife Habitat--Continued

Map symbol and soil name	Potential for habitat elements: Grain and seed crops	Grasses and legumes	Wild herba- ceous plants	Hardwood trees	Conif- erous plants	Wetland plants	Shallow water areas	Potential as habitat for--: Openland wildlife	Woodland wildlife	Wetland wildlife
726A:										
Elburn, sandy substratum-------	Fair	Good	Good	Good	Good	Fair	Fair	Good	Good	Fair
737B:										
Tama, very deep to sand-------------	Good	Good	Good	Good	Good	Poor	Very poor	Good	Good	Very poor
748A:										
Plano, sandy substratum-------	Good	Good	Good	Good	Good	Poor	Very poor	Good	Good	Very poor
748B:										
Plano, sandy substratum-------	Good	Good	Good	Good	Good	Poor	Very poor	Good	Good	Very poor
749B:										
Buckhart, till substratum-------	Good	Good	Good	Good	Good	Poor	Very poor	Good	Good	Very poor
802B:										
Orthents, loamy---	Good	Good	Good	Good	Good	Poor	Very poor	Good	Good	Very poor
802D:										
Orthents, loamy---	Good	Good	Good	Good	Good	Very poor	Very poor	Good	Good	Very poor
865.										
Pits, gravel										
964F:										
Miami-------------	Poor	Fair	Good	Good	Good	Very poor	Very poor	Fair	Good	Very poor
Hennepin----------	Very poor	Fair	Good	Good	Good	Very poor	Very poor	Fair	Good	Very poor
3073A:										
Ross--------------	Poor	Fair	Fair	Good	Fair	Fair	Very poor	Fair	Good	Poor
3107A:										
Sawmill-----------	Poor	Fair	Fair	Fair	Poor	Good	Good	Fair	Fair	Good
3451A:										
Lawson------------	Poor	Fair	Fair	Good	Fair	Good	Fair	Fair	Good	Fair
7134C:										
Camden------------	Fair	Good	Good	Good	Good	Poor	Very poor	Good	Good	Very poor
7148B:										
Proctor-----------	Good	Good	Good	Good	Good	Poor	Very poor	Good	Good	Very poor

Table 13.--Wildlife Habitat--Continued

Map symbol and soil name	Potential for habitat elements: Grain and seed crops	Grasses and legumes	Wild herbaceous plants	Hardwood trees	Coniferous plants	Wetland plants	Shallow water areas	Potential as habitat for--: Openland wildlife	Woodland wildlife	Wetland wildlife
7198A:										
Elburn	Fair	Good	Good	Good	Good	Fair	Fair	Good	Good	Fair
7199A:										
Plano	Good	Good	Good	Good	Good	Poor	Very poor	Good	Good	Very poor
7199B:										
Plano	Good	Good	Good	Good	Good	Poor	Very poor	Good	Good	Very poor
7242A:										
Kendall	Fair	Good	Fair	Good	Good	Fair	Fair	Fair	Good	Fair
7243B:										
St. Charles	Good	Good	Good	Good	Good	Poor	Very poor	Good	Good	Very poor
8074A:										
Radford	Fair	Good	Good	Good	Good	Fair	Fair	Good	Good	Fair
8107A:										
Sawmill	Poor	Fair	Fair	Fair	Poor	Good	Good	Fair	Fair	Good
8451A:										
Lawson	Fair	Good	Good	Good	Good	Fair	Fair	Good	Good	Fair
8720A:										
Aetna	Fair	Good	Fair	Good	Good	Fair	Fair	Fair	Good	Fair

Table 14a.--Building Site Development

(The information in this table indicates the dominant soil condition but does not eliminate the need for onsite investigation. The numbers in the value columns range from 0.01 to 1.00. The larger the value, the greater the limitation. See text for further explanation of ratings in this table)

Map symbol and soil name	Dwellings without basements		Dwellings with basements		Small commercial buildings	
	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
17A:						
Keomah	Very limited		Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Shrink-swell	1.00			Shrink-swell	1.00
27D2:						
Miami	Somewhat limited		Very limited		Very limited	
	Slope	0.96	Depth to saturated zone	1.00	Slope	1.00
	Shrink-swell	0.50	Slope	0.96	Shrink-swell	0.50
	Depth to saturated zone	0.39			Depth to saturated zone	0.39
43A:						
Ipava	Very limited		Very limited		Very limited	
	Shrink-swell	1.00	Depth to saturated zone	1.00	Shrink-swell	1.00
	Depth to saturated zone	0.98	Shrink-swell	0.50	Depth to saturated zone	0.98
45A:						
Denny	Very limited		Very limited		Very limited	
	Ponding	1.00	Ponding	1.00	Ponding	1.00
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Shrink-swell	1.00	Shrink-swell	1.00	Shrink-swell	1.00
56B2:						
Dana	Somewhat limited		Very limited		Somewhat limited	
	Shrink-swell	0.50	Depth to saturated zone	1.00	Shrink-swell	0.50
	Depth to saturated zone	0.07	Shrink-swell	0.50	Depth to saturated zone	0.07
67A:						
Harpster	Very limited		Very limited		Very limited	
	Ponding	1.00	Ponding	1.00	Ponding	1.00
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Shrink-swell	0.50	Shrink-swell	0.50	Shrink-swell	0.50
68A:						
Sable	Very limited		Very limited		Very limited	
	Ponding	1.00	Ponding	1.00	Ponding	1.00
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Shrink-swell	0.50	Shrink-swell	0.50	Shrink-swell	0.50
86B:						
Osco	Somewhat limited		Somewhat limited		Somewhat limited	
	Shrink-swell	0.50	Shrink-swell	0.50	Shrink-swell	0.50
			Depth to saturated zone	0.15		

Table 14a.--Building Site Development--Continued

Map symbol and soil name	Dwellings without basements		Dwellings with basements		Small commercial buildings	
	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
134C2:						
Camden	Somewhat limited		Not limited		Somewhat limited	
	Shrink-swell	0.50			Slope	0.97
					Shrink-swell	0.50
138A:						
Shiloh	Very limited		Very limited		Very limited	
	Ponding	1.00	Ponding	1.00	Ponding	1.00
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Shrink-swell	1.00	Shrink-swell	1.00	Shrink-swell	1.00
148B2:						
Proctor	Somewhat limited		Somewhat limited		Somewhat limited	
	Shrink-swell	0.50	Shrink-swell	0.50	Shrink-swell	0.50
171B:						
Catlin	Somewhat limited		Somewhat limited		Somewhat limited	
	Shrink-swell	0.50	Depth to saturated zone	0.99	Shrink-swell	0.50
			Shrink-swell	0.50		
171B2:						
Catlin	Somewhat limited		Very limited		Somewhat limited	
	Depth to saturated zone	0.98	Depth to saturated zone	1.00	Depth to saturated zone	0.98
	Shrink-swell	0.50	Shrink-swell	0.50	Shrink-swell	0.50
171C2:						
Catlin	Somewhat limited		Somewhat limited		Somewhat limited	
	Shrink-swell	0.50	Depth to saturated zone	0.99	Slope	0.97
			Shrink-swell	0.50	Shrink-swell	0.50
198A:						
Elburn	Somewhat limited		Very limited		Somewhat limited	
	Depth to saturated zone	0.98	Depth to saturated zone	1.00	Depth to saturated zone	0.98
	Shrink-swell	0.50	Shrink-swell	0.50	Shrink-swell	0.50
199A:						
Plano	Somewhat limited		Somewhat limited		Somewhat limited	
	Shrink-swell	0.50	Shrink-swell	0.50	Shrink-swell	0.50
199B2:						
Plano	Somewhat limited		Somewhat limited		Somewhat limited	
	Shrink-swell	0.50	Shrink-swell	0.50	Shrink-swell	0.50
233B:						
Birkbeck	Somewhat limited		Very limited		Somewhat limited	
	Shrink-swell	0.92	Depth to saturated zone	0.99	Shrink-swell	0.92
			Shrink-swell	0.92		
233C2:						
Birkbeck	Somewhat limited		Very limited		Somewhat limited	
	Shrink-swell	0.50	Depth to saturated zone	1.00	Slope	0.97
	Depth to saturated zone	0.28	Shrink-swell	0.50	Shrink-swell	0.50
					Depth to saturated zone	0.28

Table 14a.--Building Site Development--Continued

Map symbol and soil name	Dwellings without basements: Rating class and limiting features	Value	Dwellings with basements: Rating class and limiting features	Value	Small commercial buildings: Rating class and limiting features	Value
243B:						
St. Charles---------	Somewhat limited		Somewhat limited		Somewhat limited	
	Shrink-swell	0.50	Shrink-swell	0.50	Shrink-swell	0.50
244A:						
Hartsburg-----------	Very limited		Very limited		Very limited	
	Ponding	1.00	Ponding	1.00	Ponding	1.00
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Shrink-swell	0.50			Shrink-swell	0.50
272A:						
Edgington-----------	Very limited		Very limited		Very limited	
	Ponding	1.00	Ponding	1.00	Ponding	1.00
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
			Shrink-swell	0.50		
279B:						
Rozetta-------------	Somewhat limited		Somewhat limited		Somewhat limited	
	Shrink-swell	0.50	Shrink-swell	0.50	Shrink-swell	0.50
			Depth to saturated zone	0.15		
279B2:						
Rozetta-------------	Somewhat limited		Somewhat limited		Somewhat limited	
	Shrink-swell	0.50	Depth to saturated zone	0.99	Shrink-swell	0.50
			Shrink-swell	0.50		
322C2:						
Russell-------------	Somewhat limited		Somewhat limited		Very limited	
	Shrink-swell	0.50	Shrink-swell	0.50	Slope	1.00
	Slope	0.01	Slope	0.01	Shrink-swell	0.50
322D3:						
Russell-------------	Somewhat limited		Somewhat limited		Very limited	
	Slope	0.84	Slope	0.84	Slope	1.00
	Shrink-swell	0.50	Shrink-swell	0.50	Shrink-swell	0.50
330A:						
Peotone-------------	Very limited		Very limited		Very limited	
	Ponding	1.00	Ponding	1.00	Ponding	1.00
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Shrink-swell	1.00	Shrink-swell	1.00	Shrink-swell	1.00
533:						
Urban land----------	Not rated		Not rated		Not rated	
618F:						
Senachwine----------	Very limited		Very limited		Very limited	
	Slope	1.00	Slope	1.00	Slope	1.00
	Shrink-swell	0.50			Shrink-swell	0.50
618G:						
Senachwine----------	Very limited		Very limited		Very limited	
	Slope	1.00	Slope	1.00	Slope	1.00
	Shrink-swell	0.50			Shrink-swell	0.50

Table 14a.--Building Site Development--Continued

Map symbol and soil name	Dwellings without basements: Rating class and limiting features	Value	Dwellings with basements: Rating class and limiting features	Value	Small commercial buildings: Rating class and limiting features	Value
622C2:						
Wyanet	Somewhat limited		Not limited		Somewhat limited	
	Shrink-swell	0.50			Slope	0.97
					Shrink-swell	0.50
667B:						
Kaneville	Somewhat limited		Somewhat limited		Somewhat limited	
	Shrink-swell	0.50	Depth to saturated zone	0.99	Shrink-swell	0.50
			Shrink-swell	0.50		
726A:						
Elburn, sandy substratum	Somewhat limited		Very limited		Somewhat limited	
	Depth to saturated zone	0.95	Depth to saturated zone	1.00	Depth to saturated zone	0.95
	Shrink-swell	0.50	Shrink-swell	0.50	Shrink-swell	0.50
737B:						
Tama, very deep to sand	Somewhat limited		Somewhat limited		Somewhat limited	
	Shrink-swell	0.50	Shrink-swell	0.50	Shrink-swell	0.50
748A:						
Plano, sandy substratum	Somewhat limited		Somewhat limited		Somewhat limited	
	Shrink-swell	0.50	Shrink-swell	0.50	Shrink-swell	0.50
748B:						
Plano, sandy substratum	Somewhat limited		Somewhat limited		Somewhat limited	
	Shrink-swell	0.50	Shrink-swell	0.50	Shrink-swell	0.50
749B:						
Buckhart, till substratum	Somewhat limited		Somewhat limited		Somewhat limited	
	Shrink-swell	0.50	Depth to saturated zone	0.99	Shrink-swell	0.50
			Shrink-swell	0.50		
802B:						
Orthents, loamy	Somewhat limited		Somewhat limited		Somewhat limited	
	Shrink-swell	0.50	Shrink-swell	0.50	Shrink-swell	0.50
			Depth to saturated zone	0.47		
802D:						
Orthents, loamy	Somewhat limited		Somewhat limited		Very limited	
	Shrink-swell	0.50	Shrink-swell	0.50	Slope	1.00
	Slope	0.37	Depth to saturated zone	0.47	Shrink-swell	0.50
			Slope	0.37		
865:						
Pits, gravel	Not rated		Not rated		Not rated	

Table 14a.--Building Site Development--Continued

Map symbol and soil name	Dwellings without basements: Rating class and limiting features	Value	Dwellings with basements: Rating class and limiting features	Value	Small commercial buildings: Rating class and limiting features	Value
964F:						
Miami	Very limited		Very limited		Very limited	
	Slope	1.00	Slope	1.00	Slope	1.00
	Shrink-swell	0.50	Depth to saturated zone	1.00	Shrink-swell	0.50
	Depth to saturated zone	0.39			Depth to saturated zone	0.39
Hennepin	Very limited		Very limited		Very limited	
	Slope	1.00	Slope	1.00	Slope	1.00
3073A:						
Ross	Very limited		Very limited		Very limited	
	Flooding	1.00	Flooding	1.00	Flooding	1.00
			Depth to saturated zone	0.35		
3107A:						
Sawmill	Very limited		Very limited		Very limited	
	Ponding	1.00	Ponding	1.00	Ponding	1.00
	Flooding	1.00	Flooding	1.00	Flooding	1.00
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Shrink-swell	0.50	Shrink-swell	0.50	Shrink-swell	0.50
3451A:						
Lawson	Very limited		Very limited		Very limited	
	Flooding	1.00	Flooding	1.00	Flooding	1.00
			Depth to saturated zone	0.99		
7134C:						
Camden	Very limited		Very limited		Very limited	
	Flooding	1.00	Flooding	1.00	Flooding	1.00
	Shrink-swell	0.50			Slope	0.97
					Shrink-swell	0.50
7148B:						
Proctor	Very limited		Very limited		Very limited	
	Flooding	1.00	Flooding	1.00	Flooding	1.00
	Shrink-swell	0.50			Shrink-swell	0.50
7198A:						
Elburn	Very limited		Very limited		Very limited	
	Flooding	1.00	Flooding	1.00	Flooding	1.00
	Depth to saturated zone	0.98	Depth to saturated zone	1.00	Depth to saturated zone	0.98
	Shrink-swell	0.50	Shrink-swell	0.50	Shrink-swell	0.50
7199A:						
Plano	Very limited		Very limited		Very limited	
	Flooding	1.00	Flooding	1.00	Flooding	1.00
	Shrink-swell	0.50	Shrink-swell	0.50	Shrink-swell	0.50
7199B:						
Plano	Very limited		Very limited		Very limited	
	Flooding	1.00	Flooding	1.00	Flooding	1.00
	Shrink-swell	0.50	Shrink-swell	0.50	Shrink-swell	0.50

Table 14a.--Building Site Development--Continued

Map symbol and soil name	Dwellings without basements: Rating class and limiting features	Value	Dwellings with basements: Rating class and limiting features	Value	Small commercial buildings: Rating class and limiting features	Value
7242A:						
Kendall	Very limited		Very limited		Very limited	
	Flooding	1.00	Flooding	1.00	Flooding	1.00
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Shrink-swell	0.50	Shrink-swell	0.50	Shrink-swell	0.50
7243B:						
St. Charles	Very limited		Very limited		Very limited	
	Flooding	1.00	Flooding	1.00	Flooding	1.00
	Shrink-swell	0.50	Shrink-swell	0.50	Shrink-swell	0.50
8074A:						
Radford	Very limited		Very limited		Very limited	
	Flooding	1.00	Flooding	1.00	Flooding	1.00
	Depth to saturated zone	0.81	Depth to saturated zone	1.00	Depth to saturated zone	0.81
			Shrink-swell	0.50		
8107A:						
Sawmill	Very limited		Very limited		Very limited	
	Ponding	1.00	Ponding	1.00	Ponding	1.00
	Flooding	1.00	Flooding	1.00	Flooding	1.00
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Shrink-swell	0.50	Shrink-swell	0.50	Shrink-swell	0.50
8451A:						
Lawson	Very limited		Very limited		Very limited	
	Flooding	1.00	Flooding	1.00	Flooding	1.00
	Depth to saturated zone	0.98	Depth to saturated zone	1.00	Depth to saturated zone	0.98
8720A:						
Aetna	Very limited		Very limited		Very limited	
	Flooding	1.00	Flooding	1.00	Flooding	1.00
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Shrink-swell	0.50	Shrink-swell	0.50	Shrink-swell	0.50

Table 14b.--Building Site Development

(The information in this table indicates the dominant soil condition but does not eliminate the need for onsite investigation. The numbers in the value columns range from 0.01 to 1.00. The larger the value, the greater the limitation. See text for further explanation of ratings in this table)

Map symbol and soil name	Local roads and streets		Shallow excavations		Lawns and landscaping	
	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
17A:						
Keomah	Very limited		Very limited		Somewhat limited	
	Frost action	1.00	Depth to saturated zone	1.00	Depth to saturated zone	0.94
	Low strength	1.00	Cutbanks cave	0.10		
	Shrink-swell	1.00				
	Depth to saturated zone	0.94				
27D2:						
Miami	Very limited		Very limited		Somewhat limited	
	Low strength	1.00	Depth to saturated zone	1.00	Slope	0.96
	Slope	0.96	Slope	0.96	Depth to saturated zone	0.19
	Shrink-swell	0.50	Cutbanks cave	0.10		
	Frost action	0.50				
	Depth to saturated zone	0.19				
43A:						
Ipava	Very limited		Very limited		Somewhat limited	
	Frost action	1.00	Depth to saturated zone	1.00	Depth to saturated zone	0.75
	Low strength	1.00	Cutbanks cave	0.10		
	Shrink-swell	1.00				
	Depth to saturated zone	0.75				
45A:						
Denny	Very limited		Very limited		Very limited	
	Ponding	1.00	Ponding	1.00	Ponding	1.00
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Frost action	1.00	Cutbanks cave	0.10		
	Low strength	1.00				
	Shrink-swell	1.00				
56B2:						
Dana	Very limited		Very limited		Somewhat limited	
	Frost action	1.00	Depth to saturated zone	1.00	Depth to saturated zone	0.03
	Low strength	1.00	Cutbanks cave	0.10		
	Shrink-swell	0.50				
	Depth to saturated zone	0.03				
67A:						
Harpster	Very limited		Very limited		Very limited	
	Ponding	1.00	Ponding	1.00	Ponding	1.00
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Frost action	1.00	Cutbanks cave	0.10		
	Low strength	1.00				
	Shrink-swell	0.50				

Table 14b.--Building Site Development--Continued

Map symbol and soil name	Local roads and streets: Rating class and limiting features	Value	Shallow excavations: Rating class and limiting features	Value	Lawns and landscaping: Rating class and limiting features	Value
68A:						
Sable---------------	Very limited		Very limited		Very limited	
	Ponding	1.00	Ponding	1.00	Ponding	1.00
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Frost action	1.00	Cutbanks cave	0.10		
	Low strength	1.00				
	Shrink-swell	0.50				
86B:						
Osco----------------	Very limited		Somewhat limited		Not limited	
	Frost action	1.00	Depth to saturated zone	0.15		
	Low strength	1.00	Cutbanks cave	0.10		
	Shrink-swell	0.50				
134C2:						
Camden--------------	Very limited		Very limited		Not limited	
	Frost action	1.00	Cutbanks cave	1.00		
	Low strength	1.00				
	Shrink-swell	0.50				
138A:						
Shiloh--------------	Very limited		Very limited		Very limited	
	Ponding	1.00	Ponding	1.00	Ponding	1.00
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Frost action	1.00	Cutbanks cave	0.10		
	Low strength	1.00	Too clayey	0.02		
	Shrink-swell	1.00				
148B2:						
Proctor-------------	Very limited		Very limited		Not limited	
	Frost action	1.00	Cutbanks cave	1.00		
	Low strength	1.00				
	Shrink-swell	0.50				
171B:						
Catlin--------------	Very limited		Somewhat limited		Not limited	
	Frost action	1.00	Depth to saturated zone	0.99		
	Low strength	1.00	Cutbanks cave	0.10		
	Shrink-swell	0.50				
171B2:						
Catlin--------------	Very limited		Very limited		Somewhat limited	
	Frost action	1.00	Depth to saturated zone	1.00	Depth to saturated zone	0.75
	Low strength	1.00	Cutbanks cave	0.10		
	Depth to saturated zone	0.75				
	Shrink-swell	0.50				
171C2:						
Catlin--------------	Very limited		Somewhat limited		Not limited	
	Frost action	1.00	Depth to saturated zone	0.99		
	Low strength	1.00	Cutbanks cave	0.10		
	Shrink-swell	0.50				

Table 14b.--Building Site Development--Continued

Map symbol and soil name	Local roads and streets		Shallow excavations		Lawns and landscaping	
	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
198A:						
Elburn----------------	Very limited		Very limited		Somewhat limited	
	Frost action	1.00	Depth to saturated zone	1.00	Depth to saturated zone	0.75
	Low strength	1.00	Cutbanks cave	1.00		
	Depth to saturated zone	0.75				
	Shrink-swell	0.50				
199A:						
Plano-----------------	Very limited		Very limited		Not limited	
	Frost action	1.00	Cutbanks cave	1.00		
	Low strength	1.00				
	Shrink-swell	0.50				
199B2:						
Plano-----------------	Very limited		Somewhat limited		Not limited	
	Frost action	1.00	Cutbanks cave	0.10		
	Low strength	1.00				
	Shrink-swell	0.50				
233B:						
Birkbeck--------------	Very limited		Very limited		Not limited	
	Frost action	1.00	Depth to saturated zone	1.00		
	Low strength	1.00	Cutbanks cave	0.10		
	Shrink-swell	0.92				
233C2:						
Birkbeck--------------	Very limited		Very limited		Somewhat limited	
	Frost action	1.00	Depth to saturated zone	1.00	Depth to saturated zone	0.14
	Low strength	1.00	Cutbanks cave	0.10		
	Shrink-swell	0.50				
	Depth to saturated zone	0.14				
243B:						
St. Charles-----------	Very limited		Somewhat limited		Not limited	
	Frost action	1.00	Cutbanks cave	0.10		
	Low strength	1.00				
	Shrink-swell	0.50				
244A:						
Hartsburg-------------	Very limited		Very limited		Very limited	
	Ponding	1.00	Ponding	1.00	Ponding	1.00
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Frost action	1.00	Cutbanks cave	0.10		
	Low strength	1.00				
	Shrink-swell	0.50				
272A:						
Edgington-------------	Very limited		Very limited		Very limited	
	Ponding	1.00	Ponding	1.00	Ponding	1.00
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Frost action	1.00	Cutbanks cave	0.10		
	Low strength	1.00				

Table 14b.--Building Site Development--Continued

Map symbol and soil name	Local roads and streets: Rating class and limiting features	Value	Shallow excavations: Rating class and limiting features	Value	Lawns and landscaping: Rating class and limiting features	Value
279B:						
Rozetta-------------	Very limited		Somewhat limited		Not limited	
	Frost action	1.00	Depth to saturated zone	0.15		
	Low strength	1.00	Cutbanks cave	0.10		
	Shrink-swell	0.50				
279B2:						
Rozetta-------------	Very limited		Somewhat limited		Not limited	
	Frost action	1.00	Depth to saturated zone	0.99		
	Low strength	1.00	Cutbanks cave	0.10		
	Shrink-swell	0.50				
322C2:						
Russell-------------	Very limited		Somewhat limited		Somewhat limited	
	Frost action	1.00	Cutbanks cave	0.10	Slope	0.01
	Low strength	1.00	Slope	0.01		
	Shrink-swell	0.50				
	Slope	0.01				
322D3:						
Russell-------------	Very limited		Somewhat limited		Somewhat limited	
	Frost action	1.00	Slope	0.84	Slope	0.84
	Low strength	1.00	Cutbanks cave	0.10		
	Slope	0.84				
	Shrink-swell	0.50				
330A:						
Peotone-------------	Very limited		Very limited		Very limited	
	Ponding	1.00	Ponding	1.00	Ponding	1.00
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Frost action	1.00	Cutbanks cave	0.10		
	Low strength	1.00				
	Shrink-swell	1.00				
533:						
Urban land----------	Not rated		Not rated		Not rated	
618F:						
Senachwine----------	Very limited		Very limited		Very limited	
	Slope	1.00	Slope	1.00	Slope	1.00
	Low strength	1.00	Cutbanks cave	0.10		
	Shrink-swell	0.50				
	Frost action	0.50				
618G:						
Senachwine----------	Very limited		Very limited		Very limited	
	Slope	1.00	Slope	1.00	Slope	1.00
	Low strength	1.00	Cutbanks cave	0.10		
	Shrink-swell	0.50				
	Frost action	0.50				
622C2:						
Wyanet--------------	Very limited		Somewhat limited		Not limited	
	Low strength	1.00	Cutbanks cave	0.10		
	Shrink-swell	0.50				
	Frost action	0.50				

Table 14b.--Building Site Development--Continued

Map symbol and soil name	Local roads and streets: Rating class and limiting features	Value	Shallow excavations: Rating class and limiting features	Value	Lawns and landscaping: Rating class and limiting features	Value
667B:						
Kaneville-----------	Very limited		Somewhat limited		Not limited	
	Frost action	1.00	Depth to saturated zone	0.99		
	Low strength	1.00	Cutbanks cave	0.10		
	Shrink-swell	0.50				
726A:						
Elburn, sandy substratum---------	Very limited		Very limited		Somewhat limited	
	Frost action	1.00	Depth to saturated zone	1.00	Depth to saturated zone	0.68
	Low strength	1.00	Cutbanks cave	1.00		
	Depth to saturated zone	0.68				
	Shrink-swell	0.50				
737B:						
Tama, very deep to sand---------------	Very limited		Somewhat limited		Not limited	
	Frost action	1.00	Cutbanks cave	0.10		
	Low strength	1.00				
	Shrink-swell	0.50				
748A:						
Plano, sandy substratum---------	Very limited		Very limited		Not limited	
	Frost action	1.00	Cutbanks cave	1.00		
	Low strength	1.00				
	Shrink-swell	0.50				
748B:						
Plano, sandy substratum---------	Very limited		Very limited		Not limited	
	Frost action	1.00	Cutbanks cave	1.00		
	Low strength	1.00				
	Shrink-swell	0.50				
749B:						
Buckhart, till substratum---------	Very limited		Somewhat limited		Not limited	
	Frost action	1.00	Depth to saturated zone	0.99		
	Low strength	1.00	Cutbanks cave	0.10		
	Shrink-swell	0.50				
802B:						
Orthents, loamy-----	Somewhat limited		Somewhat limited		Not limited	
	Shrink-swell	0.50	Depth to saturated zone	0.47		
	Frost action	0.50	Cutbanks cave	0.10		
	Low strength	0.22				
802D:						
Orthents, loamy-----	Somewhat limited		Somewhat limited		Somewhat limited	
	Low strength	0.78	Depth to saturated zone	0.47	Slope	0.37
	Shrink-swell	0.50	Slope	0.37		
	Frost action	0.50	Cutbanks cave	0.10		
	Slope	0.37				
865:						
Pits, gravel--------	Not rated		Not rated		Not rated	

Table 14b.--Building Site Development--Continued

Map symbol and soil name	Local roads and streets: Rating class and limiting features	Value	Shallow excavations: Rating class and limiting features	Value	Lawns and landscaping: Rating class and limiting features	Value
964F:						
Miami---------------	Very limited		Very limited		Very limited	
	Slope	1.00	Slope	1.00	Slope	1.00
	Shrink-swell	0.50	Depth to saturated zone	1.00	Depth to saturated zone	0.19
	Frost action	0.50	Cutbanks cave	1.00		
	Low strength	0.22				
	Depth to saturated zone	0.19				
Hennepin------------	Very limited		Very limited		Very limited	
	Slope	1.00	Slope	1.00	Slope	1.00
	Frost action	0.50	Cutbanks cave	0.10		
3073A:						
Ross----------------	Very limited		Somewhat limited		Very limited	
	Flooding	1.00	Flooding	0.80	Flooding	1.00
	Frost action	0.50	Depth to saturated zone	0.35		
			Cutbanks cave	0.10		
3107A:						
Sawmill-------------	Very limited		Very limited		Very limited	
	Ponding	1.00	Ponding	1.00	Ponding	1.00
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Flooding	1.00
	Frost action	1.00	Flooding	0.80	Depth to saturated zone	1.00
	Flooding	1.00	Cutbanks cave	0.10		
	Low strength	1.00				
3451A:						
Lawson--------------	Very limited		Very limited		Very limited	
	Frost action	1.00	Depth to saturated zone	1.00	Flooding	1.00
	Flooding	1.00	Flooding	0.80		
	Low strength	1.00	Cutbanks cave	0.10		
7134C:						
Camden--------------	Very limited		Very limited		Not limited	
	Frost action	1.00	Cutbanks cave	1.00		
	Low strength	1.00				
	Shrink-swell	0.50				
	Flooding	0.40				
7148B:						
Proctor-------------	Very limited		Very limited		Not limited	
	Frost action	1.00	Cutbanks cave	1.00		
	Low strength	1.00				
	Shrink-swell	0.50				
	Flooding	0.40				
7198A:						
Elburn--------------	Very limited		Very limited		Somewhat limited	
	Frost action	1.00	Depth to saturated zone	1.00	Depth to saturated zone	0.75
	Low strength	1.00	Cutbanks cave	1.00		
	Depth to saturated zone	0.75				
	Shrink-swell	0.50				
	Flooding	0.40				

Table 14b.--Building Site Development--Continued

Map symbol and soil name	Local roads and streets: Rating class and limiting features	Value	Shallow excavations: Rating class and limiting features	Value	Lawns and landscaping: Rating class and limiting features	Value
7199A:						
Plano---------------	Very limited		Very limited		Not limited	
	Frost action	1.00	Cutbanks cave	1.00		
	Low strength	1.00				
	Shrink-swell	0.50				
	Flooding	0.40				
7199B:						
Plano---------------	Very limited		Somewhat limited		Not limited	
	Frost action	1.00	Cutbanks cave	0.10		
	Low strength	1.00				
	Shrink-swell	0.50				
	Flooding	0.40				
7242A:						
Kendall-------------	Very limited		Very limited		Somewhat limited	
	Frost action	1.00	Depth to saturated zone	1.00	Depth to saturated zone	0.94
	Low strength	1.00	Cutbanks cave	0.10		
	Depth to saturated zone	0.94				
	Shrink-swell	0.50				
	Flooding	0.40				
7243B:						
St. Charles---------	Very limited		Somewhat limited		Not limited	
	Frost action	1.00	Cutbanks cave	0.10		
	Low strength	1.00				
	Shrink-swell	0.50				
	Flooding	0.40				
8074A:						
Radford-------------	Very limited		Very limited		Somewhat limited	
	Frost action	1.00	Depth to saturated zone	1.00	Flooding	0.60
	Flooding	1.00	Flooding	0.60	Depth to saturated zone	0.48
	Low strength	1.00	Cutbanks cave	0.10		
	Depth to saturated zone	0.48				
8107A:						
Sawmill-------------	Very limited		Very limited		Very limited	
	Ponding	1.00	Ponding	1.00	Ponding	1.00
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Frost action	1.00	Flooding	0.60	Flooding	0.60
	Flooding	1.00	Cutbanks cave	0.10		
	Low strength	1.00				
8451A:						
Lawson--------------	Very limited		Very limited		Somewhat limited	
	Frost action	1.00	Depth to saturated zone	1.00	Depth to saturated zone	0.75
	Flooding	1.00	Flooding	0.60	Flooding	0.60
	Low strength	1.00	Cutbanks cave	0.10		
	Depth to saturated zone	0.75				

Table 14b.--Building Site Development--Continued

Map symbol and soil name	Local roads and streets		Shallow excavations		Lawns and landscaping	
	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
8720A:						
Aetna---------------	Very limited		Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Frost action	1.00	Flooding	0.60	Flooding	0.60
	Flooding	1.00	Cutbanks cave	0.10		
	Low strength	1.00				
	Shrink-swell	0.50				

Table 15a.--Sanitary Facilities

(The information in this table indicates the dominant soil condition but does not eliminate the need for onsite investigation. The numbers in the value columns range from 0.01 to 1.00. The larger the value, the greater the limitation. See text for further explanation of ratings in this table)

Map symbol and soil name	Septic tank absorption fields		Sewage lagoons	
	Rating class and limiting features	Value	Rating class and limiting features	Value
17A:				
Keomah	Very limited		Very limited	
	Slow water movement	1.00	Depth to saturated zone	1.00
	Depth to saturated zone	1.00	Seepage	0.53
27D2:				
Miami	Very limited		Very limited	
	Depth to saturated zone	1.00	Slope	1.00
	Slow water movement	1.00	Depth to saturated zone	0.75
	Slope	0.96	Seepage	0.53
43A:				
Ipava	Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Slow water movement	1.00	Seepage	0.53
45A:				
Denny	Very limited		Very limited	
	Slow water movement	1.00	Ponding	1.00
	Ponding	1.00	Depth to saturated zone	1.00
	Depth to saturated zone	1.00		
56B2:				
Dana	Very limited		Somewhat limited	
	Depth to saturated zone	1.00	Seepage	0.53
	Slow water movement	1.00	Depth to saturated zone	0.44
			Slope	0.32
67A:				
Harpster	Very limited		Very limited	
	Ponding	1.00	Ponding	1.00
	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Slow water movement	0.46	Seepage	0.53
68A:				
Sable	Very limited		Very limited	
	Ponding	1.00	Ponding	1.00
	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Slow water movement	0.46	Seepage	0.53

Table 15a.--Sanitary Facilities--Continued

Map symbol and soil name	Septic tank absorption fields		Sewage lagoons	
	Rating class and limiting features	Value	Rating class and limiting features	Value
86B:				
Osco	Somewhat limited		Somewhat limited	
	Slow water movement	0.46	Seepage	0.53
	Depth to saturated zone	0.40	Slope	0.18
134C2:				
Camden	Very limited		Very limited	
	Seepage, bottom layer	1.00	Seepage	1.00
	Slow water movement	0.46	Slope	1.00
138A:				
Shiloh	Very limited		Very limited	
	Slow water movement	1.00	Ponding	1.00
	Ponding	1.00	Depth to saturated zone	1.00
	Depth to saturated zone	1.00		
148B2:				
Proctor	Somewhat limited		Somewhat limited	
	Slow water movement	0.46	Seepage	0.53
			Slope	0.18
171B:				
Catlin	Very limited		Somewhat limited	
	Depth to saturated zone	1.00	Seepage	0.53
	Slow water movement	1.00	Slope	0.08
			Depth to saturated zone	0.04
171B2:				
Catlin	Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Slow water movement	1.00	Seepage	0.53
			Slope	0.08
171C2:				
Catlin	Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Slow water movement	1.00	Seepage	0.53
			Slope	0.08
198A:				
Elburn	Very limited		Very limited	
	Depth to saturated zone	1.00	Seepage	1.00
	Seepage, bottom layer	1.00	Depth to saturated zone	1.00
	Slow water movement	0.46		

Table 15a.--Sanitary Facilities--Continued

Map symbol and soil name	Septic tank absorption fields		Sewage lagoons	
	Rating class and limiting features	Value	Rating class and limiting features	Value
199A:				
Plano	Very limited		Very limited	
	Seepage, bottom layer	1.00	Seepage	1.00
	Slow water movement	0.46		
199B2:				
Plano	Very limited		Very limited	
	Seepage, bottom layer	1.00	Seepage	1.00
			Slope	0.18
	Slow water movement	0.46		
233B:				
Birkbeck	Very limited		Somewhat limited	
	Depth to saturated zone	1.00	Seepage	0.53
			Depth to saturated zone	0.19
	Slow water movement	1.00	Slope	0.18
233C2:				
Birkbeck	Very limited		Very limited	
	Depth to saturated zone	1.00	Slope	1.00
			Depth to saturated zone	0.68
	Slow water movement	1.00	Seepage	0.53
243B:				
St. Charles	Somewhat limited		Somewhat limited	
	Slow water movement	0.46	Seepage	0.53
			Slope	0.18
244A:				
Hartsburg	Very limited		Very limited	
	Ponding	1.00	Ponding	1.00
	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Slow water movement	0.46	Seepage	0.53
272A:				
Edgington	Very limited		Very limited	
	Ponding	1.00	Ponding	1.00
	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Slow water movement	1.00	Seepage	0.53
279B:				
Rozetta	Somewhat limited		Somewhat limited	
	Slow water movement	0.46	Seepage	0.53
			Slope	0.18
	Depth to saturated zone	0.40		

Table 15a.--Sanitary Facilities--Continued

Map symbol and soil name	Septic tank absorption fields		Sewage lagoons	
	Rating class and limiting features	Value	Rating class and limiting features	Value
279B2:				
Rozetta-------------	Very limited		Somewhat limited	
	Depth to saturated zone	1.00	Seepage	0.53
			Slope	0.08
	Slow water movement	1.00	Depth to saturated zone	0.04
322C2:				
Russell-------------	Very limited		Very limited	
	Slow water movement	1.00	Slope	1.00
			Seepage	0.53
	Slope	0.01		
322D3:				
Russell-------------	Very limited		Very limited	
	Slow water movement	1.00	Slope	1.00
			Seepage	0.53
	Slope	0.84		
330A:				
Peotone-------------	Very limited		Very limited	
	Ponding	1.00	Ponding	1.00
	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Slow water movement	1.00		
533:				
Urban land----------	Not rated		Not rated	
618F:				
Senachwine----------	Very limited		Very limited	
	Slope	1.00	Slope	1.00
	Slow water movement	1.00	Seepage	0.53
618G:				
Senachwine----------	Very limited		Very limited	
	Slope	1.00	Slope	1.00
	Slow water movement	1.00	Seepage	0.53
622C2:				
Wyanet--------------	Very limited		Very limited	
	Slow water	1.00	Slope	1.00
			Seepage	0.53
667B:				
Kaneville-----------	Very limited		Very limited	
	Depth to saturated zone	1.00	Seepage	1.00
			Depth to saturated zone	1.00
	Seepage, bottom layer	1.00		
			Slope	0.08
	Slow water movement	0.46		

Table 15a.--Sanitary Facilities--Continued

Map symbol and soil name	Septic tank absorption fields		Sewage lagoons	
	Rating class and limiting features	Value	Rating class and limiting features	Value
726A:				
Elburn, sandy substratum---------	Very limited		Very limited	
	Depth to saturated zone	1.00	Seepage	1.00
	Seepage, bottom layer	1.00	Depth to saturated zone	1.00
	Slow water movement	0.46		
737B:				
Tama, very deep to sand---------------	Very limited		Somewhat limited	
	Seepage, bottom layer	1.00	Seepage	0.53
	Slow water movement	0.46	Slope	0.18
748A:				
Plano, sandy substratum---------	Very limited		Very limited	
	Seepage, bottom layer	1.00	Seepage	1.00
	Slow water movement	0.46		
748B:				
Plano, sandy substratum---------	Very limited		Very limited	
	Seepage, bottom layer	1.00	Seepage	1.00
	Slow water movement	0.46	Slope	0.08
749B:				
Buckhart, till substratum---------	Very limited		Somewhat limited	
	Depth to saturated zone	1.00	Seepage	0.53
	Slow water movement	1.00	Slope	0.18
			Depth to saturated zone	0.04
802B:				
Orthents, loamy-----	Somewhat limited		Somewhat limited	
	Depth to saturated zone	0.94	Depth to saturated zone	0.40
	Slow water movement	0.78	Slope	0.32
			Seepage	0.21
802D:				
Orthents, loamy-----	Somewhat limited		Very limited	
	Depth to saturated zone	0.94	Slope	1.00
	Slow water movement	0.78	Depth to saturated zone	0.40
	Slope	0.37	Seepage	0.21
865:				
Pits, gravel--------	Not rated		Not rated	

Table 15a.--Sanitary Facilities--Continued

Map symbol and soil name	Septic tank absorption fields: Rating class and limiting features	Value	Sewage lagoons: Rating class and limiting features	Value
964F:				
Miami	Very limited		Very limited	
	Depth to saturated zone	1.00	Slope	1.00
	Slope	1.00	Depth to saturated zone	0.75
	Slow water movement	1.00	Seepage	0.53
Hennepin	Very limited		Very limited	
	Slope	1.00	Slope	1.00
	Slow water movement	1.00	Seepage	0.53
3073A:				
Ross	Very limited		Very limited	
	Flooding	1.00	Flooding	1.00
	Seepage, bottom layer	1.00	Seepage	1.00
	Depth to saturated zone	0.84	Depth to saturated zone	0.17
	Slow water movement	0.46		
3107A:				
Sawmill	Very limited		Very limited	
	Flooding	1.00	Ponding	1.00
	Ponding	1.00	Flooding	1.00
	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Slow water movement	0.46	Seepage	0.53
3451A:				
Lawson	Very limited		Very limited	
	Flooding	1.00	Flooding	1.00
	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Slow water movement	0.46	Seepage	0.53
7134C:				
Camden	Very limited		Very limited	
	Seepage, bottom layer	1.00	Seepage	1.00
	Slow water movement	0.46	Slope	1.00
	Flooding	0.40	Flooding	0.40
7148B:				
Proctor	Very limited		Very limited	
	Seepage, bottom layer	1.00	Seepage	1.00
	Slow water movement	0.46	Flooding	0.40
	Flooding	0.40	Slope	0.18

Table 15a.--Sanitary Facilities--Continued

Map symbol and soil name	Septic tank absorption fields		Sewage lagoons	
	Rating class and limiting features	Value	Rating class and limiting features	Value
7198A:				
Elburn	Very limited		Very limited	
	Depth to saturated zone	1.00	Seepage	1.00
	Seepage, bottom layer	1.00	Depth to saturated zone	1.00
	Slow water movement	0.46	Flooding	0.40
	Flooding	0.40		
7199A:				
Plano	Very limited		Very limited	
	Seepage, bottom layer	1.00	Seepage	1.00
	Slow water movement	0.46	Flooding	0.40
	Flooding	0.40		
7199B:				
Plano	Very limited		Very limited	
	Seepage, bottom layer	1.00	Seepage	1.00
	Slow water movement	0.46	Flooding	0.40
	Flooding	0.40	Slope	0.18
7242A:				
Kendall	Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Slow water movement	0.46	Seepage	0.53
	Flooding	0.40	Flooding	0.40
7243B:				
St. Charles	Somewhat limited		Somewhat limited	
	Slow water movement	0.46	Seepage	0.53
	Flooding	0.40	Flooding	0.40
			Slope	0.18
8074A:				
Radford	Very limited		Very limited	
	Flooding	1.00	Flooding	1.00
	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Slow water movement	0.46	Seepage	0.53
8107A:				
Sawmill	Very limited		Very limited	
	Flooding	1.00	Ponding	1.00
	Ponding	1.00	Flooding	1.00
	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Slow water movement	0.46	Seepage	0.53

Table 15a.--Sanitary Facilities--Continued

Map symbol and soil name	Septic tank absorption fields		Sewage lagoons	
	Rating class and limiting features	Value	Rating class and limiting features	Value
8451A:				
Lawson-------------	Very limited		Very limited	
	Flooding	1.00	Flooding	1.00
	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Slow water movement	0.46	Seepage	0.53
8720A:				
Aetna--------------	Very limited		Very limited	
	Flooding	1.00	Flooding	1.00
	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Slow water movement	1.00	Seepage	0.53

Table 15b.--Sanitary Facilities

(The information in this table indicates the dominant soil condition but does not eliminate the need for onsite investigation. The numbers in the value columns range from 0.01 to 1.00. The larger the value, the greater the limitation. See text for further explanation of ratings in this table)

Map symbol and soil name	Trench sanitary landfill		Area sanitary landfill		Daily cover for landfill	
	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
17A:						
Keomah	Very limited		Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
					Too clayey	0.50
27D2:						
Miami	Very limited		Somewhat limited		Somewhat limited	
	Depth to saturated zone	1.00	Slope	0.96	Slope	0.96
	Slope	0.96	Depth to saturated zone	0.75	Depth to saturated zone	0.86
43A:						
Ipava	Very limited		Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Too clayey	0.50			Too clayey	0.50
45A:						
Denny	Very limited		Very limited		Very limited	
	Depth to saturated zone	1.00	Ponding	1.00	Ponding	1.00
	Ponding	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Too clayey	0.50			Hard to compact	1.00
					Too clayey	0.50
56B2:						
Dana	Somewhat limited		Somewhat limited		Somewhat limited	
	Depth to saturated zone	0.95	Depth to saturated zone	0.44	Depth to saturated zone	0.68
	Too clayey	0.50			Too clayey	0.50
67A:						
Harpster	Very limited		Very limited		Very limited	
	Depth to saturated zone	1.00	Ponding	1.00	Ponding	1.00
	Ponding	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Too clayey	0.50			Too clayey	0.50
68A:						
Sable	Very limited		Very limited		Very limited	
	Depth to saturated zone	1.00	Ponding	1.00	Ponding	1.00
	Ponding	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Too clayey	0.50			Too clayey	0.50
86B:						
Osco	Very limited		Very limited		Somewhat limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Too clayey	0.50
	Too clayey	0.50				

Table 15b.--Sanitary Facilities--Continued

Map symbol and soil name	Trench sanitary landfill		Area sanitary landfill		Daily cover for landfill	
	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
134C2:						
Camden--------------	Very limited		Not limited		Somewhat limited	
	Seepage, bottom layer	1.00			Too sandy	0.50
	Too sandy	0.50			Too clayey	0.50
					Seepage	0.22
138A:						
Shiloh--------------	Very limited		Very limited		Very limited	
	Depth to saturated zone	1.00	Ponding	1.00	Ponding	1.00
	Ponding	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Too clayey	1.00			Too clayey	1.00
					Hard to compact	1.00
148B2:						
Proctor-------------	Somewhat limited		Not limited		Somewhat limited	
	Too clayey	0.50			Too clayey	0.50
171B:						
Catlin--------------	Somewhat limited		Somewhat limited		Somewhat limited	
	Depth to saturated zone	0.68	Depth to saturated zone	0.04	Too clayey	0.50
	Too clayey	0.50			Depth to saturated zone	0.24
171B2:						
Catlin--------------	Very limited		Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Too clayey	0.50			Too clayey	0.50
171C2:						
Catlin--------------	Somewhat limited		Somewhat limited		Somewhat limited	
	Depth to saturated zone	0.76	Depth to saturated zone	0.08	Too clayey	0.50
	Too clayey	0.50			Depth to saturated zone	0.32
198A:						
Elburn--------------	Very limited		Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Seepage, bottom layer	1.00			Too clayey	0.50
	Too clayey	0.50				
199A:						
Plano---------------	Very limited		Not limited		Somewhat limited	
	Seepage, bottom layer	1.00			Too clayey	0.50
	Too clayey	0.50				
199B2:						
Plano---------------	Very limited		Not limited		Somewhat limited	
	Seepage, bottom layer	1.00			Too clayey	0.50
	Too clayey	0.50				
233B:						
Birkbeck------------	Somewhat limited		Somewhat limited		Somewhat limited	
	Depth to saturated zone	0.86	Depth to saturated zone	0.19	Too clayey	0.50
	Too clayey	0.50			Depth to saturated zone	0.47

Table 15b.--Sanitary Facilities--Continued

Map symbol and soil name	Trench sanitary landfill		Area sanitary landfill		Daily cover for landfill	
	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
233C2:						
Birkbeck	Somewhat limited		Somewhat limited		Somewhat limited	
	Depth to saturated zone	0.99	Depth to saturated zone	0.68	Depth to saturated zone	0.82
	Too clayey	0.50			Too clayey	0.50
243B:						
St. Charles	Somewhat limited		Not limited		Somewhat limited	
	Too clayey	0.50			Too clayey	0.50
244A:						
Hartsburg	Very limited		Very limited		Very limited	
	Depth to saturated zone	1.00	Ponding	1.00	Ponding	1.00
	Ponding	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
272A:						
Edgington	Very limited		Very limited		Very limited	
	Depth to saturated zone	1.00	Ponding	1.00	Ponding	1.00
	Ponding	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Too clayey	0.50			Too clayey	0.50
279B:						
Rozetta	Very limited		Very limited		Somewhat limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Too clayey	0.50
	Too clayey	0.50				
279B2:						
Rozetta	Somewhat limited		Somewhat limited		Somewhat limited	
	Depth to saturated zone	0.68	Depth to saturated zone	0.04	Too clayey	0.50
	Too clayey	0.50			Depth to saturated zone	0.24
322C2:						
Russell	Somewhat limited		Somewhat limited		Somewhat limited	
	Too clayey	0.50	Slope	0.01	Too clayey	0.50
	Slope	0.01			Slope	0.01
322D3:						
Russell	Somewhat limited		Somewhat limited		Somewhat limited	
	Slope	0.84	Slope	0.84	Slope	0.84
	Too clayey	0.50			Too clayey	0.50
330A:						
Peotone	Very limited		Very limited		Very limited	
	Depth to saturated zone	1.00	Ponding	1.00	Ponding	1.00
	Ponding	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Too clayey	0.50			Hard to compact	1.00
					Too clayey	0.50
533:						
Urban land	Not rated		Not rated		Not rated	
618F:						
Senachwine	Very limited		Very limited		Very limited	
	Slope	1.00	Slope	1.00	Slope	1.00

Table 15b.--Sanitary Facilities--Continued

Map symbol and soil name	Trench sanitary landfill: Rating class and limiting features	Value	Area sanitary landfill: Rating class and limiting features	Value	Daily cover for landfill: Rating class and limiting features	Value
618G:						
Senachwine	Very limited		Very limited		Very limited	
	Slope	1.00	Slope	1.00	Slope	1.00
622C2:						
Wyanet	Not limited		Not limited		Not limited	
667B:						
Kaneville	Very limited		Very limited		Somewhat limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Too clayey	0.50
	Seepage, bottom layer	1.00			Depth to saturated zone	0.38
	Too clayey	0.50				
726A:						
Elburn, sandy substratum	Very limited		Very limited		Somewhat limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	0.99
	Seepage, bottom layer	1.00			Too clayey	0.50
	Too clayey	0.50				
737B:						
Tama, very deep to sand	Very limited		Not limited		Somewhat limited	
	Seepage, bottom layer	1.00			Too clayey	0.50
	Too clayey	0.50				
748A:						
Plano, sandy substratum	Very limited		Not limited		Somewhat limited	
	Seepage, bottom layer	1.00			Too clayey	0.50
	Too clayey	0.50				
748B:						
Plano, sandy substratum	Very limited		Not limited		Somewhat limited	
	Seepage, bottom layer	1.00			Too clayey	0.50
	Too clayey	0.50				
749B:						
Buckhart, till substratum	Somewhat limited		Somewhat limited		Somewhat limited	
	Depth to saturated zone	0.68	Depth to saturated zone	0.04	Too clayey	0.50
	Too clayey	0.50			Depth to saturated zone	0.24
802B:						
Orthents, loamy	Very limited		Very limited		Not limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00		

Table 15b.--Sanitary Facilities--Continued

Map symbol and soil name	Trench sanitary landfill		Area sanitary landfill		Daily cover for landfill	
	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
802D:						
Orthents, loamy-----	Very limited		Very limited		Somewhat limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Too clayey	0.50
	Too clayey	0.50	Slope	0.37	Slope	0.37
	Slope	0.37				
865:						
Pits, gravel--------	Not rated		Not rated		Not rated	
964F:						
Miami---------------	Very limited		Very limited		Very limited	
	Slope	1.00	Slope	1.00	Slope	1.00
	Depth to saturated zone	1.00	Depth to saturated zone	0.75	Depth to saturated zone	0.86
Hennepin------------	Very limited		Very limited		Very limited	
	Slope	1.00	Slope	1.00	Slope	1.00
3073A:						
Ross----------------	Very limited		Very limited		Not limited	
	Flooding	1.00	Flooding	1.00		
	Depth to saturated zone	1.00	Depth to saturated zone	1.00		
	Seepage, bottom layer	1.00				
3107A:						
Sawmill-------------	Very limited		Very limited		Very limited	
	Flooding	1.00	Flooding	1.00	Ponding	1.00
	Depth to saturated zone	1.00	Ponding	1.00	Depth to saturated zone	1.00
	Ponding	1.00	Depth to saturated zone	1.00	Too clayey	0.50
	Too clayey	0.50				
3451A:						
Lawson--------------	Very limited		Very limited		Somewhat limited	
	Flooding	1.00	Flooding	1.00	Depth to saturated zone	0.47
	Depth to saturated zone	1.00	Depth to saturated zone	1.00		
7134C:						
Camden--------------	Very limited		Somewhat limited		Somewhat limited	
	Seepage, bottom layer	1.00	Flooding	0.40	Too clayey	0.50
					Seepage	0.22
	Flooding	0.40				
7148B:						
Proctor-------------	Very limited		Somewhat limited		Not limited	
	Seepage, bottom layer	1.00	Flooding	0.40		
	Flooding	0.40				
7198A:						
Elburn--------------	Very limited		Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Seepage, bottom layer	1.00	Flooding	0.40	Too clayey	0.50
	Too clayey	0.50				
	Flooding	0.40				

Table 15b.--Sanitary Facilities--Continued

Map symbol and soil name	Trench sanitary landfill: Rating class and limiting features	Value	Area sanitary landfill: Rating class and limiting features	Value	Daily cover for landfill: Rating class and limiting features	Value
7199A:						
Plano	Very limited		Somewhat limited		Somewhat limited	
	Seepage, bottom layer	1.00	Flooding	0.40	Too clayey	0.50
	Too clayey	0.50				
	Flooding	0.40				
7199B:						
Plano	Very limited		Somewhat limited		Somewhat limited	
	Seepage, bottom layer	1.00	Flooding	0.40	Too clayey	0.50
	Too clayey	0.50				
	Flooding	0.40				
7242A:						
Kendall	Very limited		Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Too clayey	0.50	Flooding	0.40	Too clayey	0.50
	Flooding	0.40				
7243B:						
St. Charles	Somewhat limited		Somewhat limited		Somewhat limited	
	Too clayey	0.50	Flooding	0.40	Too clayey	0.50
	Flooding	0.40				
8074A:						
Radford	Very limited		Very limited		Somewhat limited	
	Flooding	1.00	Flooding	1.00	Depth to saturated zone	0.96
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Too clayey	0.50
	Too clayey	0.50				
8107A:						
Sawmill	Very limited		Very limited		Very limited	
	Flooding	1.00	Flooding	1.00	Ponding	1.00
	Depth to saturated zone	1.00	Ponding	1.00	Depth to saturated zone	1.00
	Ponding	1.00	Depth to saturated zone	1.00	Too clayey	0.50
	Too clayey	0.50				
8451A:						
Lawson	Very limited		Very limited		Very limited	
	Flooding	1.00	Flooding	1.00	Depth to saturated zone	1.00
	Depth to saturated zone	1.00	Depth to saturated zone	1.00		
8720A:						
Aetna	Very limited		Very limited		Very limited	
	Flooding	1.00	Flooding	1.00	Depth to saturated zone	1.00
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Too clayey	0.50
	Too clayey	0.50				

Table 16a.--Construction Materials

(The information in this table indicates the dominant soil condition but does not eliminate the need for onsite investigation. The numbers in the value columns range from 0.00 to 0.99. The smaller the value, the greater the limitation. See text for further explanation of ratings in this table)

Map symbol and soil name	Potential as source of reclamation material		Potential as source of roadfill		Potential as source of topsoil	
	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
17A:						
Keomah	Fair		Poor		Fair	
	Low content of organic matter	0.02	Low strength	0.00	Wetness	0.04
	Too clayey	0.08	Wetness	0.04	Too clayey	0.05
	Water erosion	0.68	Shrink-swell	0.89		
	Too acid	0.74				
27D2:						
Miami	Fair		Fair		Fair	
	Low content of organic matter	0.01	Wetness	0.53	Slope	0.04
	Too acid	0.84			Wetness	0.53
	Water erosion	0.90				
	Carbonate content	0.92				
43A:						
Ipava	Fair		Poor		Fair	
	Too clayey	0.18	Low strength	0.00	Too clayey	0.14
	Low content of organic matter	0.18	Wetness	0.14	Wetness	0.14
	Too acid	0.84	Shrink-swell	0.83		
	Water erosion	0.99				
45A:						
Denny	Fair		Poor		Poor	
	Too clayey	0.02	Wetness	0.00	Wetness	0.00
	Low content of organic matter	0.50	Low strength	0.00	Too clayey	0.01
	Water erosion	0.90	Shrink-swell	0.69		
	Too acid	0.95				
56B2:						
Dana	Fair		Poor		Fair	
	Carbonate content	0.68	Low strength	0.00	Wetness	0.76
	Too acid	0.95	Wetness	0.76	Too clayey	0.76
	Too clayey	0.98	Shrink-swell	0.93		
	Water erosion	0.99				
67A:						
Harpster	Fair		Poor		Poor	
	Carbonate content	0.80	Wetness	0.00	Wetness	0.00
	Too clayey	0.92	Low strength	0.00	Too clayey	0.72
	Water erosion	0.99	Shrink-swell	0.99	Carbonate content	0.96
68A:						
Sable	Fair		Poor		Poor	
	Water erosion	0.68	Wetness	0.00	Wetness	0.00
	Too clayey	0.92	Low strength	0.00	Too clayey	0.92
	Too acid	0.92	Shrink-swell	0.99		

Table 16a.--Construction Materials--Continued

Map symbol and soil name	Potential as source of reclamation material: Rating class and limiting features	Value	Potential as source of roadfill: Rating class and limiting features	Value	Potential as source of topsoil: Rating class and limiting features	Value
86B:						
Osco----------------	Fair		Poor		Fair	
	Low content of organic matter	0.50	Low strength	0.00	Too clayey	0.64
			Shrink-swell	0.87		
	Too acid	0.84				
	Too clayey	0.98				
	Water erosion	0.99				
134C2:						
Camden--------------	Fair		Good		Fair	
	Low content of organic matter	0.12			Too clayey	0.49
	Too clayey	0.82				
	Water erosion	0.90				
	Too acid	0.97				
138A:						
Shiloh--------------	Poor		Poor		Poor	
	Too clayey	0.00	Wetness	0.00	Wetness	0.00
			Low strength	0.00	Too clayey	0.00
			Shrink-swell	0.22		
148B2:						
Proctor-------------	Fair		Poor		Fair	
	Too clayey	0.82	Low strength	0.00	Too clayey	0.60
	Low content of organic matter	0.92				
	Too acid	0.99				
	Water erosion	0.99				
171B:						
Catlin--------------	Fair		Poor		Fair	
	Too clayey	0.82	Low strength	0.00	Too clayey	0.64
	Water erosion	0.99	Wetness	0.95	Wetness	0.95
			Shrink-swell	0.98		
171B2:						
Catlin--------------	Fair		Poor		Fair	
	Too clayey	0.92	Low strength	0.00	Wetness	0.14
	Water erosion	0.99	Wetness	0.14	Too clayey	0.79
171C2:						
Catlin--------------	Fair		Poor		Fair	
	Too clayey	0.82	Low strength	0.00	Too clayey	0.70
	Too acid	0.95	Shrink-swell	0.87	Wetness	0.95
	Water erosion	0.99	Wetness	0.95		
198A:						
Elburn--------------	Fair		Poor		Fair	
	Too clayey	0.98	Low strength	0.00	Wetness	0.14
	Water erosion	0.99	Wetness	0.14	Too clayey	0.81
			Shrink-swell	0.99		
199A:						
Plano---------------	Fair		Poor		Fair	
	Low content of organic matter	0.68	Low strength	0.00	Too clayey	0.67
			Shrink-swell	0.98		
	Too acid	0.97				
	Too clayey	0.98				
	Water erosion	0.99				

Table 16a.--Construction Materials--Continued

Map symbol and soil name	Potential as source of reclamation material		Potential as source of roadfill		Potential as source of topsoil	
	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
199B2:						
Plano---------------	Fair		Poor		Fair	
	Water erosion	0.90	Low strength	0.00	Too clayey	0.72
	Too clayey	0.92	Shrink-swell	0.97		
233B:						
Birkbeck------------	Fair		Poor		Fair	
	Too acid	0.16	Low strength	0.00	Too clayey	0.49
	Low content of organic matter	0.18	Shrink-swell	0.78	Wetness	0.89
	Water erosion	0.68	Wetness	0.89	Too acid	0.98
	Too clayey	0.82				
	Carbonate content	0.95				
233C2:						
Birkbeck------------	Fair		Poor		Fair	
	Low content of organic matter	0.40	Low strength	0.00	Too clayey	0.52
	Too acid	0.54	Wetness	0.59	Wetness	0.59
	Too clayey	0.82	Shrink-swell	0.97	Too acid	0.98
	Water erosion	0.90				
	Carbonate content	0.92				
243B:						
St. Charles---------	Fair		Poor		Fair	
	Low content of organic matter	0.12	Low strength	0.00	Too clayey	0.57
	Too acid	0.88	Shrink-swell	0.95		
	Water erosion	0.90				
	Too clayey	0.98				
244A:						
Hartsburg-----------	Fair		Poor		Poor	
	Low content of organic matter	0.18	Wetness	0.00	Wetness	0.00
	Water erosion	0.68	Low strength	0.00	Too clayey	0.82
	Carbonate content	0.68				
	Too clayey	0.82				
272A:						
Edgington-----------	Fair		Poor		Poor	
	Too acid	0.54	Wetness	0.00	Wetness	0.00
	Water erosion	0.90	Low strength	0.00		
279B:						
Rozetta-------------	Fair		Poor		Fair	
	Low content of organic matter	0.12	Low strength	0.00	Too clayey	0.57
	Water erosion	0.68	Shrink-swell	0.92		
	Too acid	0.68				
	Too clayey	0.98				
279B2:						
Rozetta-------------	Fair		Poor		Fair	
	Low content of organic matter	0.24	Low strength	0.00	Too clayey	0.60
	Too acid	0.88	Shrink-swell	0.93	Wetness	0.98
	Water erosion	0.90	Wetness	0.98		
	Carbonate content	0.95				
	Too clayey	0.98				

Table 16a.--Construction Materials--Continued

Map symbol and soil name	Potential as source of reclamation material: Rating class and limiting features	Value	Potential as source of roadfill: Rating class and limiting features	Value	Potential as source of topsoil: Rating class and limiting features	Value
322C2:						
Russell-------------	Fair		Poor		Fair	
	Too acid	0.20	Low strength	0.00	Too clayey	0.57
	Low content of organic matter	0.32	Shrink-swell	0.90	Too acid	0.76
	Carbonate content	0.68				
	Water erosion	0.90				
	Too clayey	0.92				
322D3:						
Russell-------------	Fair		Poor		Fair	
	Low content of organic matter	0.32	Low strength	0.00	Slope	0.16
			Shrink-swell	0.97	Too clayey	0.57
	Too acid	0.84				
	Water erosion	0.90				
	Too clayey	0.92				
	Carbonate content	0.92				
330A:						
Peotone-------------	Fair		Poor		Poor	
	Too clayey	0.18	Wetness	0.00	Wetness	0.00
			Low strength	0.00	Too clayey	0.18
			Shrink-swell	0.21		
533:						
Urban land----------	Not rated		Not rated		Not rated	
618F:						
Senachwine----------	Fair		Poor		Poor	
	Low content of organic matter	0.02	Slope	0.00	Slope	0.00
					Too clayey	0.55
	Carbonate content	0.68				
	Too acid	0.74				
	Too clayey	0.98				
	Water erosion	0.99				
618G:						
Senachwine----------	Fair		Poor		Poor	
	Low content of organic matter	0.01	Slope	0.00	Slope	0.00
					Too clayey	0.55
	Too acid	0.54			Too acid	0.98
	Carbonate content	0.68				
	Water erosion	0.68				
	Too clayey	0.98				
622C2:						
Wyanet--------------	Fair		Good		Fair	
	Low content of organic matter	0.12			Too clayey	0.70
	Carbonate content	0.92				
	Too clayey	0.98				
	Too acid	0.99				
	Water erosion	0.99				
667B:						
Kaneville-----------	Fair		Poor		Fair	
	Low content of organic matter	0.18	Low strength	0.00	Too clayey	0.55
			Wetness	0.93	Wetness	0.93
	Water erosion	0.68	Shrink-swell	0.98		
	Too clayey	0.92				
	Too acid	0.95				

Table 16a.--Construction Materials--Continued

Map symbol and soil name	Potential as source of reclamation material: Rating class and limiting features	Value	Potential as source of roadfill: Rating class and limiting features	Value	Potential as source of topsoil: Rating class and limiting features	Value
726A:						
Elburn, sandy substratum	Fair		Fair		Fair	
	Water erosion	0.90	Wetness	0.18	Wetness	0.18
	Too clayey	0.98	Shrink-swell	0.99	Too clayey	0.81
737B:						
Tama, very deep to sand	Fair		Poor		Fair	
	Low content of organic matter	0.50	Low strength	0.00	Too clayey	0.64
			Shrink-swell	0.93		
	Too clayey	0.98				
	Water erosion	0.99				
748A:						
Plano, sandy substratum	Fair		Poor		Fair	
	Too clayey	0.92	Low strength	0.00	Too clayey	0.72
	Water erosion	0.99	Shrink-swell	0.99		
748B:						
Plano, sandy substratum	Fair		Fair		Fair	
	Too clayey	0.92	Shrink-swell	0.99	Too clayey	0.72
	Water erosion	0.99				
749B:						
Buckhart, till substratum	Fair		Poor		Fair	
	Low content of organic matter	0.68	Low strength	0.00	Too clayey	0.67
			Shrink-swell	0.87	Wetness	0.98
	Too clayey	0.98	Wetness	0.98		
	Water erosion	0.99				
802B:						
Orthents, loamy	Fair		Poor		Good	
	Low content of organic matter	0.50	Low strength	0.00		
			Shrink-swell	0.87		
	Water erosion	0.90				
802D:						
Orthents, loamy	Fair		Poor		Fair	
	Low content of organic matter	0.12	Low strength	0.00	Slope	0.63
			Shrink-swell	0.87		
	Water erosion	0.90				
865:						
Pits, gravel	Not rated		Not rated		Not rated	
964F:						
Miami	Fair		Fair		Poor	
	Low content of organic matter	0.18	Slope	0.02	Slope	0.00
			Wetness	0.53	Wetness	0.53
	Too acid	0.88			Hard to reclaim (rock fragments)	0.68
	Water erosion	0.90				
	Carbonate content	0.92				

Table 16a.--Construction Materials--Continued

Map symbol and soil name	Potential as source of reclamation material: Rating class and limiting features	Value	Potential as source of roadfill: Rating class and limiting features	Value	Potential as source of topsoil: Rating class and limiting features	Value
964F:						
Hennepin------------	Fair		Poor		Poor	
	Low content of organic matter	0.18	Slope	0.00	Slope	0.00
	Carbonate content	0.61				
	Water erosion	0.90				
3073A:						
Ross----------------	Good		Good		Good	
3107A:						
Sawmill-------------	Fair		Poor		Poor	
	Too clayey	0.98	Wetness	0.00	Wetness	0.00
	Too acid	0.99	Low strength	0.00	Too clayey	0.98
			Shrink-swell	0.87		
3451A:						
Lawson--------------	Fair		Poor		Fair	
	Low content of organic matter	0.88	Low strength	0.00	Wetness	0.89
			Wetness	0.89		
	Water erosion	0.99				
7134C:						
Camden--------------	Fair		Good		Fair	
	Low content of organic matter	0.12			Too clayey	0.49
	Too clayey	0.82				
	Water erosion	0.90				
	Too acid	0.97				
7148B:						
Proctor-------------	Fair		Good		Fair	
	Low content of organic matter	0.18			Too clayey	0.67
	Too acid	0.95				
	Too clayey	0.98				
	Water erosion	0.99				
7198A:						
Elburn--------------	Fair		Poor		Fair	
	Too clayey	0.98	Low strength	0.00	Wetness	0.14
	Water erosion	0.99	Wetness	0.14	Too clayey	0.81
			Shrink-swell	0.99		
7199A:						
Plano---------------	Fair		Poor		Fair	
	Low content of organic matter	0.68	Low strength	0.00	Too clayey	0.67
			Shrink-swell	0.98		
	Too acid	0.97				
	Too clayey	0.98				
	Water erosion	0.99				
7199B:						
Plano---------------	Fair		Poor		Fair	
	Water erosion	0.90	Low strength	0.00	Too clayey	0.72
	Too clayey	0.92	Shrink-swell	0.97		

Table 16a.--Construction Materials--Continued

Map symbol and soil name	Potential as source of reclamation material		Potential as source of roadfill		Potential as source of topsoil	
	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
7242A:						
Kendall	Fair		Poor		Fair	
	Low content of organic matter	0.12	Low strength	0.00	Wetness	0.04
	Water erosion	0.68	Wetness	0.04	Too clayey	0.57
	Too acid	0.88	Shrink-swell	0.95		
	Too clayey	0.98				
7243B:						
St. Charles	Fair		Poor		Fair	
	Low content of organic matter	0.12	Low strength	0.00	Too clayey	0.57
	Too acid	0.88	Shrink-swell	0.95		
	Water erosion	0.90				
	Too clayey	0.98				
8074A:						
Radford	Fair		Poor		Fair	
	Water erosion	0.68	Low strength	0.00	Wetness	0.29
	Too acid	0.84	Wetness	0.29		
			Shrink-swell	0.99		
8107A:						
Sawmill	Fair		Poor		Poor	
	Too clayey	0.98	Wetness	0.00	Wetness	0.00
			Low strength	0.00	Too clayey	0.98
			Shrink-swell	0.87		
8451A:						
Lawson	Good		Fair		Fair	
			Wetness	0.14	Wetness	0.14
			Low strength	0.22		
8720A:						
Aetna	Fair		Poor		Poor	
	Water erosion	0.99	Wetness	0.00	Wetness	0.00
			Low strength	0.00		
			Shrink-swell	0.87		

Table 16b.--Construction Materials

(The information in this table indicates the dominant soil condition but does not eliminate the need for onsite investigation. The ratings given for the thickest layer are for the thickest layer above and excluding the bottom layer. The numbers in the value column range from 0.00 to 0.99. The greater the value, the greater the likelihood that the bottom layer or thickest layer of the soil is a source of sand. See text for further explanation of ratings in this table)

Map symbol and soil name	Potential as source of sand	
	Rating class	Value
17A:		
Keomah	Poor	
	Bottom layer	0.00
	Thickest layer	0.00
27D2:		
Miami	Poor	
	Bottom layer	0.00
	Thickest layer	0.00
43A:		
Ipava	Poor	
	Bottom layer	0.00
	Thickest layer	0.00
45A:		
Denny	Poor	
	Bottom layer	0.00
	Thickest layer	0.00
56B2:		
Dana	Poor	
	Bottom layer	0.00
	Thickest layer	0.00
67A:		
Harpster	Poor	
	Bottom layer	0.00
	Thickest layer	0.00
68A:		
Sable	Poor	
	Bottom layer	0.00
	Thickest layer	0.00
86B:		
Osco	Poor	
	Bottom layer	0.00
	Thickest layer	0.00
134C2:		
Camden	Fair	
	Thickest layer	0.00
	Bottom layer	0.08

Table 16b.--Construction Materials--Continued

Map symbol and soil name	Potential as source of sand	
	Rating class	Value
138A:		
Shiloh	Poor	
	Bottom layer	0.00
	Thickest layer	0.00
148B2:		
Proctor	Poor	
	Bottom layer	0.00
	Thickest layer	0.00
171B:		
Catlin	Poor	
	Bottom layer	0.00
	Thickest layer	0.00
171B2:		
Catlin	Poor	
	Bottom layer	0.00
	Thickest layer	0.00
171C2:		
Catlin	Poor	
	Bottom layer	0.00
	Thickest layer	0.00
198A:		
Elburn	Fair	
	Thickest layer	0.00
	Bottom layer	0.05
199A:		
Plano	Poor	
	Bottom layer	0.00
	Thickest layer	0.00
199B2:		
Plano	Fair	
	Thickest layer	0.00
	Bottom layer	0.05
233B:		
Birkbeck	Poor	
	Bottom layer	0.00
	Thickest layer	0.00
233C2:		
Birkbeck	Poor	
	Bottom layer	0.00
	Thickest layer	0.00
243B:		
St. Charles	Poor	
	Bottom layer	0.00
	Thickest layer	0.00
244A:		
Hartsburg	Poor	
	Bottom layer	0.00
	Thickest layer	0.00

Table 16b.--Construction Materials--Continued

Map symbol and soil name	Potential as source of sand	
	Rating class	Value
272A:		
Edgington	Poor	
	Thickest layer	0.00
	Bottom layer	0.00
279B:		
Rozetta	Poor	
	Bottom layer	0.00
	Thickest layer	0.00
279B2:		
Rozetta	Poor	
	Bottom layer	0.00
	Thickest layer	0.00
322C2:		
Russell	Poor	
	Bottom layer	0.00
	Thickest layer	0.00
322D3:		
Russell	Poor	
	Bottom layer	0.00
	Thickest layer	0.00
330A:		
Peotone	Poor	
	Bottom layer	0.00
	Thickest layer	0.00
533:		
Urban land	Not rated	
618F:		
Senachwine	Poor	
	Bottom layer	0.00
	Thickest layer	0.00
618G:		
Senachwine	Poor	
	Bottom layer	0.00
	Thickest layer	0.00
622C2:		
Wyanet	Poor	
	Bottom layer	0.00
	Thickest layer	0.00
667B:		
Kaneville	Poor	
	Bottom layer	0.00
	Thickest layer	0.00
726A:		
Elburn, sandy substratum	Fair	
	Thickest layer	0.00
	Bottom layer	0.31

Table 16b.--Construction Materials--Continued

Map symbol and soil name	Potential as source of sand	
	Rating class	Value
737B:		
Tama, very deep to sand	Fair	
	Thickest layer	0.00
	Bottom layer	0.10
748A:		
Plano, sandy substratum	Fair	
	Thickest layer	0.00
	Bottom layer	0.31
748B:		
Plano, sandy substratum	Fair	
	Thickest layer	0.00
	Bottom layer	0.31
749B:		
Buckhart, till substratum	Poor	
	Bottom layer	0.00
	Thickest layer	0.00
802B:		
Orthents, loamy	Poor	
	Bottom layer	0.00
	Thickest layer	0.00
802D:		
Orthents, loamy	Poor	
	Bottom layer	0.00
	Thickest layer	0.00
865:		
Pits, gravel	Not rated	
964F:		
Miami	Fair	
	Thickest layer	0.00
	Bottom layer	0.07
Hennepin	Poor	
	Bottom layer	0.00
	Thickest layer	0.00
3073A:		
Ross	Poor	
	Bottom layer	0.00
	Thickest layer	0.00
3107A:		
Sawmill	Poor	
	Bottom layer	0.00
	Thickest layer	0.00
3451A:		
Lawson	Poor	
	Bottom layer	0.00
	Thickest layer	0.00

Table 16b.--Construction Materials--Continued

Map symbol and soil name	Potential as source of sand: Rating class	Value
7134C:		
Camden	Fair	
	Thickest layer	0.00
	Bottom layer	0.08
7148B:		
Proctor	Poor	
	Bottom layer	0.00
	Thickest layer	0.00
7198A:		
Elburn	Fair	
	Thickest layer	0.00
	Bottom layer	0.05
7199A:		
Plano	Poor	
	Bottom layer	0.00
	Thickest layer	0.00
7199B:		
Plano	Fair	
	Thickest layer	0.00
	Bottom layer	0.05
7242A:		
Kendall	Poor	
	Bottom layer	0.00
	Thickest layer	0.00
7243B:		
St. Charles	Poor	
	Bottom layer	0.00
	Thickest layer	0.00
8074A:		
Radford	Poor	
	Bottom layer	0.00
	Thickest layer	0.00
8107A:		
Sawmill	Poor	
	Bottom layer	0.00
	Thickest layer	0.00
8451A:		
Lawson	Poor	
	Bottom layer	0.00
	Thickest layer	0.00
8720A:		
Aetna	Poor	
	Bottom layer	0.00
	Thickest layer	0.00

Table 17a.--Water Management

(The information in this table indicates the dominant soil condition but does not eliminate the need for onsite investigation. The numbers in the value columns range from 0.01 to 1.00. The larger the value, the greater the limitation. See text for further explanation of ratings in this table)

Map symbol and soil name	Pond reservoir areas		Embankments, dikes, and levees		Aquifer-fed excavated ponds	
	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
17A:						
Keomah	Somewhat limited		Very limited		Somewhat limited	
	Seepage	0.72	Depth to saturated zone	1.00	Slow refill	0.28
					Cutbanks cave	0.10
			Piping	0.30		
27D2:						
Miami	Somewhat limited		Very limited		Very limited	
	Seepage	0.72	Depth to saturated zone	1.00	Depth to water	1.00
	Slope	0.02				
			Piping	0.97		
43A:						
Ipava	Somewhat limited		Very limited		Somewhat limited	
	Seepage	0.72	Depth to saturated zone	1.00	Slow refill	0.28
					Cutbanks cave	0.10
			Piping	0.08		
45A:						
Denny	Somewhat limited		Very limited		Somewhat limited	
	Seepage	0.04	Ponding	1.00	Slow refill	0.28
			Depth to saturated zone	1.00	Cutbanks cave	0.10
			Piping	0.16		
56B2:						
Dana	Somewhat limited		Somewhat limited		Very limited	
	Seepage	0.72	Depth to saturated zone	0.95	Depth to water	1.00
			Piping	0.12		
67A:						
Harpster	Somewhat limited		Very limited		Somewhat limited	
	Seepage	0.72	Ponding	1.00	Slow refill	0.28
			Depth to saturated zone	1.00	Cutbanks cave	0.10
			Piping	0.22		
68A:						
Sable	Somewhat limited		Very limited		Somewhat limited	
	Seepage	0.72	Ponding	1.00	Slow refill	0.28
			Depth to saturated zone	1.00	Cutbanks cave	0.10
			Piping	0.31		
86B:						
Osco	Somewhat limited		Somewhat limited		Very limited	
	Seepage	0.72	Piping	0.03	Depth to water	1.00
134C2:						
Camden	Very limited		Very limited		Very limited	
	Seepage	1.00	Piping	0.99	Depth to water	1.00
			Seepage	0.08		

Table 17a.--Water Management--Continued

Map symbol and soil name	Pond reservoir areas		Embankments, dikes, and levees		Aquifer-fed excavated ponds	
	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
138A:						
Shiloh	Somewhat limited		Very limited		Somewhat limited	
	Seepage	0.04	Ponding	1.00	Slow refill	0.96
			Depth to saturated zone	1.00	Cutbanks cave	0.10
			Hard to compact	0.13		
148B2:						
Proctor	Somewhat limited		Somewhat limited		Very limited	
	Seepage	0.72	Piping	0.58	Depth to water	1.00
171B:						
Catlin	Somewhat limited		Somewhat limited		Very limited	
	Seepage	0.72	Depth to saturated zone	0.68	Depth to water	1.00
			Piping	0.51		
171B2:						
Catlin	Somewhat limited		Very limited		Very limited	
	Seepage	0.72	Depth to saturated zone	1.00	Depth to water	1.00
			Piping	0.55		
171C2:						
Catlin	Somewhat limited		Somewhat limited		Very limited	
	Seepage	0.72	Depth to saturated zone	0.75	Depth to water	1.00
			Piping	0.11		
198A:						
Elburn	Very limited		Very limited		Very limited	
	Seepage	1.00	Depth to saturated zone	1.00	Cutbanks cave	1.00
			Piping	0.51		
			Seepage	0.05		
199A:						
Plano	Very limited		Somewhat limited		Very limited	
	Seepage	1.00	Piping	0.48	Depth to water	1.00
			Seepage	0.01		
199B2:						
Plano	Very limited		Somewhat limited		Very limited	
	Seepage	1.00	Piping	0.29	Depth to water	1.00
			Seepage	0.05		
233B:						
Birkbeck	Somewhat limited		Somewhat limited		Very limited	
	Seepage	0.72	Depth to saturated zone	0.86	Depth to water	1.00
			Piping	0.14		
233C2:						
Birkbeck	Somewhat limited		Very limited		Very limited	
	Seepage	0.72	Depth to saturated zone	0.99	Depth to water	1.00
			Piping	0.12		

Table 17a.--Water Management--Continued

Map symbol and soil name	Pond reservoir areas: Rating class and limiting features	Value	Embankments, dikes, and levees: Rating class and limiting features	Value	Aquifer-fed excavated ponds: Rating class and limiting features	Value
243B:						
St. Charles	Somewhat limited		Somewhat limited		Very limited	
	Seepage	0.72	Piping	0.63	Depth to water	1.00
244A:						
Hartsburg	Somewhat limited		Very limited		Somewhat limited	
	Seepage	0.72	Ponding	1.00	Slow refill	0.28
			Depth to saturated zone	1.00	Cutbanks cave	0.10
			Piping	0.39		
272A:						
Edgington	Somewhat limited		Very limited		Somewhat limited	
	Seepage	0.72	Ponding	1.00	Slow refill	0.28
			Depth to saturated zone	1.00	Cutbanks cave	0.10
			Piping	0.68		
279B:						
Rozetta	Somewhat limited		Somewhat limited		Very limited	
	Seepage	0.72	Piping	0.01	Depth to water	1.00
279B2:						
Rozetta	Somewhat limited		Somewhat limited		Very limited	
	Seepage	0.72	Depth to saturated zone	0.68	Depth to water	1.00
			Piping	0.31		
322C2:						
Russell	Somewhat limited		Somewhat limited		Very limited	
	Seepage	0.72	Piping	0.47	Depth to water	1.00
322D3:						
Russell	Somewhat limited		Somewhat limited		Very limited	
	Seepage	0.72	Piping	0.28	Depth to water	1.00
	Slope	0.01				
330A:						
Peotone	Somewhat limited		Very limited		Somewhat limited	
	Seepage	0.04	Ponding	1.00	Slow refill	0.96
			Depth to saturated zone	1.00	Cutbanks cave	0.10
533:						
Urban land	Not rated		Not rated		Not rated	
618F:						
Senachwine	Somewhat limited		Very limited		Very limited	
	Seepage	0.72	Piping	1.00	Depth to water	1.00
	Slope	0.36				
618G:						
Senachwine	Somewhat limited		Very limited		Very limited	
	Slope	0.99	Piping	1.00	Depth to water	1.00
	Seepage	0.72				
622C2:						
Wyanet	Somewhat limited		Very limited		Very limited	
	Seepage	0.72	Piping	1.00	Depth to water	1.00

Table 17a.--Water Management--Continued

Map symbol and soil name	Pond reservoir areas		Embankments, dikes, and levees		Aquifer-fed excavated ponds	
	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
667B:						
Kaneville-----------	Very limited		Somewhat limited		Somewhat limited	
	Seepage	1.00	Depth to saturated zone	0.80	Cutbanks cave	0.10
			Piping	0.29	Depth to saturated zone	0.09
726A:						
Elburn, sandy substratum---------	Very limited		Very limited		Very limited	
	Seepage	1.00	Depth to saturated zone	1.00	Cutbanks cave	1.00
			Piping	0.31		
			Seepage	0.31		
			Thin layer	0.11		
737B:						
Tama, very deep to sand---------------	Very limited		Somewhat limited		Very limited	
	Seepage	1.00	Piping	0.27	Depth to water	1.00
			Seepage	0.10		
748A:						
Plano, sandy substratum---------	Very limited		Somewhat limited		Very limited	
	Seepage	1.00	Seepage	0.31	Depth to water	1.00
			Thin layer	0.16		
			Piping	0.11		
748B:						
Plano, sandy substratum---------	Very limited		Somewhat limited		Very limited	
	Seepage	1.00	Thin layer	0.46	Depth to water	1.00
			Seepage	0.31		
			Piping	0.16		
749B:						
Buckhart, till substratum---------	Somewhat limited		Somewhat limited		Very limited	
	Seepage	0.72	Depth to saturated zone	0.68	Depth to water	1.00
			Piping	0.17		
802B:						
Orthents, loamy-----	Somewhat limited		Somewhat limited		Somewhat limited	
	Seepage	0.47	Piping	0.58	Depth to saturated zone	0.90
					Slow refill	0.53
					Cutbanks cave	0.10
802D:						
Orthents, loamy-----	Somewhat limited		Somewhat limited		Somewhat limited	
	Seepage	0.47	Piping	0.59	Depth to saturated zone	0.90
	Slope	0.01			Slow refill	0.53
					Cutbanks cave	0.10
865:						
Pits, gravel--------	Not rated		Not rated		Not rated	

Table 17a.--Water Management--Continued

Map symbol and soil name	Pond reservoir areas: Rating class and limiting features	Value	Embankments, dikes, and levees: Rating class and limiting features	Value	Aquifer-fed excavated ponds: Rating class and limiting features	Value
964F:						
Miami	Somewhat limited		Very limited		Very limited	
	Seepage	0.72	Piping	1.00	Depth to water	1.00
	Slope	0.24	Depth to saturated zone	1.00		
			Seepage	0.07		
Hennepin	Somewhat limited		Very limited		Very limited	
	Slope	0.36	Piping	1.00	Depth to water	1.00
	Seepage	0.04				
3073A:						
Ross	Very limited		Very limited		Somewhat limited	
	Seepage	1.00	Piping	1.00	Depth to saturated zone	0.96
					Cutbanks cave	0.10
3107A:						
Sawmill	Somewhat limited		Very limited		Somewhat limited	
	Seepage	0.72	Ponding	1.00	Slow refill	0.28
			Depth to saturated zone	1.00	Cutbanks cave	0.10
			Piping	0.02		
3451A:						
Lawson	Somewhat limited		Somewhat limited		Somewhat limited	
	Seepage	0.72	Depth to saturated zone	0.86	Slow refill	0.28
			Piping	0.84	Cutbanks cave	0.10
					Depth to saturated zone	0.06
7134C:						
Camden	Very limited		Very limited		Very limited	
	Seepage	1.00	Piping	1.00	Depth to water	1.00
			Seepage	0.08		
7148B:						
Proctor	Very limited		Somewhat limited		Very limited	
	Seepage	1.00	Piping	0.57	Depth to water	1.00
			Seepage	0.05		
7198A:						
Elburn	Very limited		Very limited		Very limited	
	Seepage	1.00	Depth to saturated zone	1.00	Cutbanks cave	1.00
			Piping	0.51		
			Seepage	0.05		
7199A:						
Plano	Very limited		Somewhat limited		Very limited	
	Seepage	1.00	Piping	0.69	Depth to water	1.00
			Seepage	0.01		
7199B:						
Plano	Very limited		Somewhat limited		Very limited	
	Seepage	1.00	Piping	0.29	Depth to water	1.00
			Seepage	0.05		

Table 17a.--Water Management--Continued

Map symbol and soil name	Pond reservoir areas		Embankments, dikes, and levees		Aquifer-fed excavated ponds	
	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
7242A:						
Kendall	Somewhat limited		Very limited		Somewhat limited	
	Seepage	0.72	Depth to saturated zone	1.00	Slow refill	0.28
					Cutbanks cave	0.10
			Piping	0.82		
7243B:						
St. Charles	Somewhat limited		Somewhat limited		Very limited	
	Seepage	0.72	Piping	0.63	Depth to water	1.00
8074A:						
Radford	Somewhat limited		Very limited		Somewhat limited	
	Seepage	0.72	Depth to saturated zone	1.00	Slow refill	0.28
					Cutbanks cave	0.10
			Piping	0.57		
8107A:						
Sawmill	Somewhat limited		Very limited		Somewhat limited	
	Seepage	0.72	Ponding	1.00	Slow refill	0.28
			Depth to saturated zone	1.00	Cutbanks cave	0.10
			Piping	0.03		
8451A:						
Lawson	Somewhat limited		Very limited		Somewhat limited	
	Seepage	0.72	Depth to saturated zone	1.00	Slow refill	0.28
					Cutbanks cave	0.10
			Piping	1.00		
8720A:						
Aetna	Somewhat limited		Very limited		Somewhat limited	
	Seepage	0.72	Depth to saturated zone	1.00	Slow refill	0.28
					Cutbanks cave	0.10
			Piping	0.07		

Table 17b.--Water Management

(The information in this table indicates the dominant soil condition but does not eliminate the need for onsite investigation. The numbers in the value columns range from 0.01 to 1.00. The larger the value, the greater the limitation. See text for further explanation of ratings in this table)

Map symbol and soil name	Constructing grassed waterways and surface drains		Constructing terraces and diversions		Tile drains and underground outlets	
	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
17A:						
Keomah	Not limited		Very limited		Very limited	
			Water erosion	1.00	Restricted permeability	0.96
			Depth to saturated zone	1.00	Frost action	0.10
					Deep to water	0.01
27D2:						
Miami	Very limited		Very limited		Very limited	
	Slope	1.00	Water erosion	1.00	Slope	1.00
			Slope	1.00	Depth to dense layer	0.20
			Depth to saturated zone	1.00	Deep to water	0.11
43A:						
Ipava	Not limited		Very limited		Somewhat limited	
			Water erosion	1.00	Restricted permeability	0.21
			Depth to saturated zone	1.00	Frost action	0.10
					Deep to water	0.03
45A:						
Denny	Not limited		Very limited		Very limited	
			Water erosion	1.00	Restricted permeability	0.96
			Ponding	1.00	Frequent ponding	0.33
			Depth to saturated zone	1.00	Frost action	0.10
56B2:						
Dana	Somewhat limited		Very limited		Somewhat limited	
	Slope	0.37	Water erosion	1.00	Deep to water	0.17
			Depth to saturated zone	1.00	Frost action	0.10
			Slope	0.37	Slope	0.04
67A:						
Harpster	Not limited		Very limited		Somewhat limited	
			Water erosion	1.00	Frequent ponding	0.33
			Ponding	1.00	Frost action	0.10
			Depth to saturated zone	1.00		
68A:						
Sable	Not limited		Very limited		Somewhat limited	
			Water erosion	1.00	Frequent ponding	0.33
			Ponding	1.00	Frost action	0.10
			Depth to saturated zone	1.00		
86B:						
Osco	Somewhat limited		Very limited		Very limited	
	Slope	0.26	Water erosion	1.00	Very deep to water	1.00
			Slope	0.26	Frost action	0.10
					Slope	0.01

Table 17b.--Water Management--Continued

Map symbol and soil name	Constructing grassed waterways and surface drains		Constructing terraces and diversions		Tile drains and underground outlets	
	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
134C2:						
Camden---------------	Somewhat limited		Very limited		Very limited	
	Slope	0.99	Water erosion	1.00	Very deep to water	1.00
			Slope	0.99	Slope	0.74
					Frost action	0.10
138A:						
Shiloh---------------	Not limited		Very limited		Somewhat limited	
			Ponding	1.00	Frequent ponding	0.47
			Depth to saturated zone	1.00	Restricted permeability	0.21
			Water erosion	0.88	Frost action	0.10
148B2:						
Proctor--------------	Somewhat limited		Very limited		Very limited	
	Slope	0.26	Water erosion	1.00	Very deep to water	1.00
			Slope	0.26	Frost action	0.10
					Slope	0.01
171B:						
Catlin---------------	Somewhat limited		Very limited		Somewhat limited	
	Slope	0.16	Water erosion	1.00	Deep to water	0.32
			Depth to saturated zone	1.00	Frost action	0.10
			Slope	0.16		
171B2:						
Catlin---------------	Somewhat limited		Very limited		Somewhat limited	
	Slope	0.16	Water erosion	1.00	Frost action	0.10
			Depth to saturated zone	1.00	Deep to water	0.03
			Slope	0.16		
171C2:						
Catlin---------------	Somewhat limited		Very limited		Somewhat limited	
	Slope	0.99	Water erosion	1.00	Slope	0.74
			Depth to saturated zone	1.00	Deep to water	0.32
			Slope	0.99	Frost action	0.10
198A:						
Elburn---------------	Not limited		Very limited		Somewhat limited	
			Water erosion	1.00	Frost action	0.10
			Depth to saturated zone	1.00	Deep to water	0.03
199A:						
Plano----------------	Not limited		Very limited		Very limited	
			Water erosion	1.00	Very deep to water	1.00
					Frost action	0.10
199B2:						
Plano----------------	Somewhat limited		Very limited		Very limited	
	Slope	0.26	Water erosion	1.00	Very deep to water	1.00
			Slope	0.26	Frost action	0.10
					Slope	0.01

Table 17b.--Water Management--Continued

Map symbol and soil name	Constructing grassed waterways and surface drains		Constructing terraces and diversions		Tile drains and underground outlets	
	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
233B:						
Birkbeck------------	Somewhat limited		Very limited		Somewhat limited	
	Slope	0.26	Water erosion	1.00	Deep to water	0.25
			Depth to saturated zone	1.00	Frost action	0.10
			Slope	0.26	Slope	0.01
233C2:						
Birkbeck------------	Somewhat limited		Very limited		Somewhat limited	
	Slope	0.99	Water erosion	1.00	Slope	0.74
			Depth to saturated zone	1.00	Deep to water	0.12
			Slope	0.99	Frost action	0.10
243B:						
St. Charles---------	Somewhat limited		Very limited		Very limited	
	Slope	0.26	Water erosion	1.00	Very deep to water	1.00
			Slope	0.26	Frost action	0.10
					Slope	0.01
244A:						
Hartsburg-----------	Not limited		Very limited		Somewhat limited	
			Water erosion	1.00	Frequent ponding	0.33
			Ponding	1.00	Frost action	0.10
			Depth to saturated zone	1.00		
272A:						
Edgington-----------	Not limited		Very limited		Somewhat limited	
			Water erosion	1.00	Frequent ponding	0.33
			Ponding	1.00	Restricted permeability	0.21
			Depth to saturated zone	1.00	Frost action	0.10
279B:						
Rozetta-------------	Somewhat limited		Very limited		Very limited	
	Slope	0.26	Water erosion	1.00	Very deep to water	1.00
			Slope	0.26	Frost action	0.10
					Slope	0.01
279B2:						
Rozetta-------------	Somewhat limited		Very limited		Somewhat limited	
	Slope	0.16	Water erosion	1.00	Deep to water	0.37
			Depth to saturated zone	1.00	Frost action	0.10
			Slope	0.16		
322C2:						
Russell-------------	Very limited		Very limited		Very limited	
	Slope	1.00	Water erosion	1.00	Very deep to water	1.00
			Slope	1.00	Slope	0.84
					Frost action	0.10

Table 17b.--Water Management--Continued

Map symbol and soil name	Constructing grassed waterways and surface drains		Constructing terraces and diversions		Tile drains and underground outlets	
	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
322D3:						
Russell-------------	Very limited		Very limited		Very limited	
	Slope	1.00	Water erosion	1.00	Slope	1.00
			Slope	1.00	Very deep to water	1.00
					Frost action	0.10
330A:						
Peotone-------------	Not limited		Very limited		Somewhat limited	
			Ponding	1.00	Frequent ponding	0.47
			Depth to saturated zone	1.00	Restricted permeability	0.21
			Water erosion	0.12	Frost action	0.10
533:						
Urban land----------	Not rated		Not rated		Not rated	
618F:						
Senachwine----------	Very limited		Very limited		Very limited	
	Slope	1.00	Water erosion	1.00	Slope	1.00
			Slope	1.00	Very deep to water	1.00
618G:						
Senachwine----------	Very limited		Very limited		Very limited	
	Slope	1.00	Water erosion	1.00	Slope	1.00
			Slope	1.00	Very deep to water	1.00
					Restricted permeability	0.21
					Depth to dense layer	0.01
622C2:						
Wyanet--------------	Somewhat limited		Somewhat limited		Very limited	
	Slope	0.99	Slope	0.99	Very deep to water	1.00
			Water erosion	0.88	Slope	0.74
					Restricted permeability	0.21
					Depth to dense layer	0.16
667B:						
Kaneville-----------	Somewhat limited		Very limited		Somewhat limited	
	Slope	0.16	Water erosion	1.00	Deep to water	0.29
			Depth to saturated zone	1.00	Frost action	0.10
			Slope	0.16		
726A:						
Elburn, sandy substratum---------	Not limited		Very limited		Somewhat limited	
			Water erosion	1.00	Frost action	0.10
			Depth to saturated zone	1.00	Deep to water	0.04

Table 17b.--Water Management--Continued

Map symbol and soil name	Constructing grassed waterways and surface drains		Constructing terraces and diversions		Tile drains and underground outlets	
	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
737B:						
Tama, very deep to sand	Somewhat limited		Very limited		Very limited	
	Slope	0.26	Water erosion	1.00	Very deep to water	1.00
			Slope	0.26	Frost action	0.10
					Slope	0.01
748A:						
Plano, sandy substratum	Not limited		Very limited		Very limited	
			Water erosion	1.00	Very deep to water	1.00
					Frost action	0.10
748B:						
Plano, sandy substratum	Somewhat limited		Very limited		Very limited	
	Slope	0.16	Water erosion	1.00	Very deep to water	1.00
			Slope	0.16	Frost action	0.10
749B:						
Buckhart, till substratum	Somewhat limited		Very limited		Somewhat limited	
	Slope	0.26	Water erosion	1.00	Deep to water	0.37
			Depth to saturated zone	1.00	Frost action	0.10
			Slope	0.26	Slope	0.01
802B:						
Orthents, loamy	Somewhat limited		Very limited		Very limited	
	Slope	0.37	Water erosion	1.00	Very deep to water	1.00
			Slope	0.37	Restricted permeability	0.21
					Slope	0.04
802D:						
Orthents, loamy	Very limited		Very limited		Very limited	
	Slope	1.00	Water erosion	1.00	Very deep to water	1.00
			Slope	1.00	Slope	1.00
					Restricted permeability	0.21
865:						
Pits, gravel	Not rated		Not rated		Not rated	
964F:						
Miami	Very limited		Very limited		Very limited	
	Slope	1.00	Slope	1.00	Slope	1.00
			Depth to saturated zone	1.00	Depth to dense layer	0.65
			Water erosion	0.88	Deep to water	0.11

Table 17b.--Water Management--Continued

Map symbol and soil name	Constructing grassed waterways and surface drains: Rating class and limiting features	Value	Constructing terraces and diversions: Rating class and limiting features	Value	Tile drains and underground outlets: Rating class and limiting features	Value
964F:						
Hennepin------------	Very limited		Very limited		Very limited	
	Slope	1.00	Water erosion	1.00	Slope	1.00
			Slope	1.00	Very deep to water	1.00
					Depth to dense layer	1.00
					Restricted permeability	0.21
3073A:						
Ross----------------	Not limited		Somewhat limited		Very limited	
			Water erosion	0.88	Very deep to water	1.00
					Frequent flooding	0.35
3107A:						
Sawmill-------------	Not limited		Very limited		Somewhat limited	
			Ponding	1.00	Frequent flooding	0.35
			Depth to saturated zone	1.00	Frequent ponding	0.33
			Water erosion	0.50	Frost action	0.10
3451A:						
Lawson--------------	Not limited		Very limited		Somewhat limited	
			Depth to saturated zone	1.00	Frequent flooding	0.35
			Water erosion	0.88	Deep to water	0.25
					Frost action	0.10
7134C:						
Camden--------------	Somewhat limited		Very limited		Very limited	
	Slope	0.99	Water erosion	1.00	Very deep to water	1.00
			Slope	0.99	Slope	0.74
					Frost action	0.10
					Rare flooding	0.05
7148B:						
Proctor-------------	Somewhat limited		Very limited		Very limited	
	Slope	0.26	Water erosion	1.00	Very deep to water	1.00
			Slope	0.26	Frost action	0.10
					Rare flooding	0.05
					Slope	0.01
7198A:						
Elburn--------------	Not limited		Very limited		Somewhat limited	
			Water erosion	1.00	Frost action	0.10
			Depth to saturated zone	1.00	Rare flooding	0.05
					Deep to water	0.03
7199A:						
Plano---------------	Not limited		Very limited		Very limited	
			Water erosion	1.00	Very deep to water	1.00
					Frost action	0.10
					Rare flooding	0.05

Table 17b.--Water Management--Continued

Map symbol and soil name	Constructing grassed waterways and surface drains		Constructing terraces and diversions		Tile drains and underground outlets	
	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
7199B:						
Plano	Somewhat limited		Very limited		Very limited	
	Slope	0.26	Water erosion	1.00	Very deep to water	1.00
			Slope	0.26	Frost action	0.10
					Rare flooding	0.05
					Slope	0.01
7242A:						
Kendall	Not limited		Very limited		Somewhat limited	
			Water erosion	1.00	Frost action	0.10
			Depth to saturated zone	1.00	Rare flooding	0.05
					Deep to water	0.01
7243B:						
St. Charles	Somewhat limited		Very limited		Very limited	
	Slope	0.26	Water erosion	1.00	Very deep to water	1.00
			Slope	0.26	Frost action	0.10
					Rare flooding	0.05
					Slope	0.01
8074A:						
Radford	Not limited		Very limited		Somewhat limited	
			Water erosion	1.00	Occasional flooding	0.10
			Depth to saturated zone	1.00	Frost action	0.10
					Deep to water	0.06
8107A:						
Sawmill	Not limited		Very limited		Somewhat limited	
			Ponding	1.00	Frequent ponding	0.33
			Depth to saturated zone	1.00	Occasional flooding	0.10
			Water erosion	0.50	Frost action	0.10
8451A:						
Lawson	Not limited		Very limited		Somewhat limited	
			Depth to saturated zone	1.00	Occasional flooding	0.10
			Water erosion	0.88	Frost action	0.10
					Deep to water	0.03
8720A:						
Aetna	Not limited		Very limited		Somewhat limited	
			Water erosion	1.00	Occasional flooding	0.10
			Depth to saturated zone	1.00	Frost action	0.10

Table 18.--Engineering Index Properties

(Absence of an entry indicates that data were not estimated)

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plas-ticity index
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
	In				Pct	Pct					Pct	
17A:												
Keomah----------	0-11	Silt loam	CL, ML	A-4, A-6	0	0	100	100	100	95-100	25-35	10-15
	11-18	Silt loam	CL, ML	A-4, A-6	0	0	100	100	100	95-100	25-35	10-20
	18-33	Silty clay, silty clay loam	CH, CL	A-7-6	0	0	100	100	100	95-100	45-55	25-30
	33-51	Silty clay loam	CL	A-6, A-7-6	0	0	100	100	100	95-100	35-45	15-25
	51-89	Silt loam	CL, CL-ML, ML	A-6, A-4	0	0	100	100	100	95-100	25-35	5-15
27D2:												
Miami-----------	0-4	Silt loam	CL, ML	A-6	0	0	95-100	95-100	90-98	80-90	29-37	10-16
	4-12	Silty clay loam	CL	A-6	0	0	95-100	90-100	85-95	75-90	33-39	13-18
	12-28	Clay loam	CL	A-6	0	0-3	90-100	85-98	75-95	55-85	33-39	12-18
	28-33	Clay loam	CL	A-6	0	0-3	90-100	85-98	75-95	55-85	33-39	12-18
	33-60	Loam	CL-ML, ML, CL, SC, SC-SM	A-4	0	0-3	90-100	85-98	75-95	45-75	22-28	4-10
43A:												
Ipava-----------	0-10	Silt loam	CL	A-4	0	0	100	100	97-100	95-100	24-37	4-14
	10-18	Silty clay loam	CL	A-7-6	0	0	100	100	97-100	95-100	40-46	15-20
	18-31	Silty clay loam, silty clay	CH, CL	A-7-6	0	0	100	100	97-100	95-100	45-57	22-32
	31-50	Silty clay loam	CL	A-7-6	0	0	100	100	97-100	95-100	37-46	16-24
	50-60	Silt loam	CL, CL-ML	A-4, A-6	0	0	100	100	96-100	93-100	24-37	7-18
45A:												
Denny-----------	0-8	Silt loam	CL	A-4, A-6	0	0	100	100	95-100	95-100	30-40	8-15
	8-21	Silt loam	CL, CL-ML	A-4, A-6	0	0	100	100	95-100	95-100	25-40	5-15
	21-46	Silty clay loam, silty clay	CH, CL	A-6, A-7-5, A-7-6	0	0	100	100	95-100	95-100	35-60	15-35
	46-80	Silt loam, silty clay loam	CL	A-6	0	0	100	100	95-100	95-100	25-40	11-20
56B2:												
Dana------------	0-7	Silt loam	CL, ML	A-6	0	0	100	97-100	95-100	85-100	29-37	10-16
	7-34	Silty clay loam	CL	A-7-6, A-6	0	0	100	97-100	95-100	85-100	37-46	17-24
	34-53	Clay loam	CL	A-6	0	0	95-100	85-98	70-95	50-80	33-39	13-18
	53-60	Loam	CL, CL-ML, SC, SC-SM	A-4, A-6	0-1	0-3	85-100	80-95	70-90	45-70	22-33	4-14

Table 18.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification: Unified	Classification: AASHTO	Fragments >10 inches	Fragments 3-10 inches	Percentage passing sieve number-- 4	10	40	200	Liquid limit	Plas-ticity index
	In				Pct	Pct					Pct	
67A:												
Harpster--------	0-18	Silty clay loam	ML, CL	A-7-6	0	0	100	97-100	95-100	85-100	40-46	15-19
	18-41	Silty clay loam	CL	A-7-6, A-6	0	0	100	97-100	95-100	85-100	37-46	17-24
	41-56	Silt loam	CL	A-6, A-4	0	0	100	97-100	95-100	85-100	24-37	7-18
	56-60	Loam, silt loam	CL, CL-ML	A-4, A-6	0	0	100	95-100	70-90	50-70	22-33	4-14
68A:												
Sable-----------	0-23	Silty clay loam	CL, ML	A-7-6, A-7-5	0	0	100	100	97-100	95-100	40-46	15-19
	23-38	Silty clay loam	CL	A-7-6, A-6	0	0	100	100	97-100	95-100	37-46	16-24
	38-47	Silt loam, silty clay loam	CL	A-6, A-4	0	0	100	100	97-100	95-100	24-37	7-17
	47-60	Silt loam	CL	A-6, A-4	0	0	100	100	97-100	95-100	24-37	7-18
86B:												
Osco------------	0-14	Silt loam	CL, ML	A-6, A-4	0	0	100	100	100	95-100	35-45	7-20
	14-55	Silty clay loam, silt loam	CL	A-6, A-7-6	0	0	100	100	100	95-100	40-50	15-25
	55-60	Silt loam, silty clay loam	CL, ML	A-6, A-4	0	0	100	100	100	95-100	35-45	7-25
134C2:												
Camden----------	0-7	Silt loam	CL, CL-ML, ML	A-4, A-6	0	0	100	100	95-100	95-100	24-37	6-15
	7-34	Silt loam, silty clay loam	CL	A-7-6, A-6	0	0	100	97-100	95-100	95-100	35-46	14-24
	34-43	Loam, clay loam	CL, SC	A-4, A-6	0	0-5	90-100	90-100	70-85	45-70	25-33	8-14
	43-80	Stratified loamy sand to sandy loam	SC-SM, SM	A-2-4, A-4, A-1-b	0	0-5	90-100	80-100	35-60	15-40	19-25	1-7
138A:												
Shiloh----------	0-19	Silty clay loam	MH	A-7-5	0	0	100	100	95-100	84-98	50-55	13-23
	19-48	Silty clay, silty clay loam	CH, MH	A-7-5, A-7-6	0	0	100	100	98-100	84-100	50-63	22-34
	48-68	Silty clay loam, silty clay	CL, CH	A-7-6	0	0	100	100	98-100	87-99	43-57	24-33
	68-86	Clay, silty clay, silty clay loam, clay loam	CL, CH	A-7-6	0	0	100	91-100	84-100	62-95	45-62	25-36
148B2:												
Proctor---------	0-13	Silt loam	CL, ML	A-6	0	0	100	97-100	95-100	85-100	29-37	10-16
	13-32	Silty clay loam	CL	A-7-6, A-6	0	0	100	97-100	95-100	85-100	37-46	17-24
	32-49	Stratified loam to clay loam	CL	A-6, A-4	0	0	95-100	90-100	75-90	55-70	25-33	8-14
	49-60	Stratified sandy clay loam to loam to loamy sand	SC, CL-ML, CL, SC-SM	A-6, A-4, A-2-6, A-2-4	0	0	95-100	80-100	50-90	25-65	25-32	6-15

Table 18.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plas- ticity index
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
	In				Pct	Pct					Pct	
171B:												
Catlin----------	0-11	Silt loam	CL, CL-ML, ML	A-4, A-6	0	0	100	100	97-100	95-100	24-37	5-15
	11-16	Silty clay loam	CL	A-7-6	0	0	100	100	97-100	95-100	40-46	16-21
	16-41	Silty clay loam	CL	A-7-6, A-6	0	0	100	100	95-100	85-100	37-46	16-24
	41-45	Clay loam	CL	A-6	0	0	90-98	85-98	76-95	54-83	33-39	12-18
	45-60	Loam	CL, CL-ML, SC, SC-SM	A-4, A-6	0-1	0-3	90-100	85-95	70-90	45-70	22-33	4-14
171B2:												
Catlin----------	0-8	Silt loam	CL, ML	A-6	0	0	100	100	97-100	95-100	29-37	10-16
	8-34	Silty clay loam	CL	A-7-6, A-6	0	0	100	100	97-100	95-100	37-46	16-24
	34-43	Silt loam	CL	A-6, A-4	0	0	100	97-100	95-100	85-100	24-37	7-17
	43-60	Loam	CL, CL-ML, SC-SM, SC	A-4, A-6	0-1	0-3	90-100	85-95	70-90	45-70	22-33	4-14
171C2:												
Catlin----------	0-9	Silt loam	CL, ML	A-6	0	0	100	100	97-100	95-100	29-37	10-16
	9-40	Silty clay loam	CL	A-7-6, A-6	0	0	100	100	97-100	95-100	37-46	16-24
	40-50	Silty clay loam, silt loam	CL	A-6	0	0	100	97-100	95-100	85-100	35-40	14-20
	50-55	Clay loam	CL	A-6	0	0	90-98	85-98	76-95	55-85	33-39	12-18
	55-60	Clay loam	CL	A-6	0-1	0-2	90-98	80-95	70-90	50-80	33-39	13-18
198A:												
Elburn----------	0-16	Silt loam	CL, CL-ML, ML	A-6, A-4	0	0	100	100	97-100	95-100	24-37	4-14
	16-49	Silty clay loam, silt loam	CL	A-6, A-7-6	0	0	100	100	97-100	95-100	37-46	16-24
	49-58	Stratified sandy loam to silt loam	CL-ML, CL	A-4, A-6	0	0	95-100	95-100	85-100	55-75	20-30	5-15
	58-62	Stratified sandy loam to loamy sand	SC-SM, SM	A-2-4, A-4	0	0	95-100	90-100	50-85	20-45	19-25	1-7
199A:												
Plano-----------	0-14	Silt loam	CL, CL-ML, ML	A-4, A-6	0	0	100	100	95-100	90-100	20-30	5-15
	14-49	Silty clay loam, silt loam	CL	A-6	0	0	100	100	95-100	90-100	25-40	10-25
	49-60	Loam, clay loam, sandy loam	CL, ML, SC, SM	A-4, A-6	0	0-1	90-100	85-95	60-90	40-65	30-45	10-25
	60-72	Stratified loamy sand to silt loam	SC, SM, CL, ML, SC-SM, CL-ML	A-2-4, A-4	0	0-5	90-100	70-95	40-80	15-55	20-25	NP-10

Table 18.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification: Unified	Classification: AASHTO	Fragments: >10 inches	Fragments: 3-10 inches	Percentage passing sieve number--: 4	10	40	200	Liquid limit	Plasticity index
	In				Pct	Pct					Pct	
199B2:												
Plano-----------	0-9	Silt loam	CL, ML	A-6	0	0	100	100	97-100	95-100	29-37	10-16
	9-46	Silty clay loam	CL	A-6, A-7-6	0	0	100	100	97-100	95-100	37-46	16-24
	46-53	Loam	CL, SC, SC-SM	A-6, A-4	0	0	90-100	80-100	70-90	45-70	25-33	8-14
	53-60	Sandy loam	SC-SM, SM	A-2-4, A-1-b, A-4	0	0	90-100	75-100	45-85	20-50	19-28	1-9
233B:												
Birkbeck--------	0-4	Silt loam	CL, ML	A-6	0	0	100	100	97-100	95-100	29-37	11-18
	4-9	Silt loam	CL	A-6, A-4	0	0	100	100	97-100	95-100	24-37	7-18
	9-54	Silty clay loam	CL	A-7-6, A-6	0	0	100	100	97-100	95-100	37-46	16-25
	54-60	Loam	CL, SC	A-6, A-4	0	0-1	85-100	85-100	70-90	45-70	25-33	8-14
	60-68	Loam	CL, SC, SC-SM, CL-ML	A-4, A-6	0-1	0-3	85-100	85-100	70-90	45-70	22-33	4-14
233C2:												
Birkbeck--------	0-7	Silt loam	CL, ML	A-6	0	0	100	100	97-100	95-100	29-37	11-18
	7-46	Silty clay loam	CL	A-7-6, A-6	0	0	100	100	97-100	95-100	37-46	16-25
	46-57	Loam	CL, SC	A-6, A-4	0	0	90-100	85-100	70-90	45-70	25-33	8-14
	57-60	Loam	CL, SC, SC-SM, CL-ML	A-4, A-6	0-1	0-3	90-100	85-100	70-90	45-70	22-33	4-14
243B:												
St. Charles-----	0-8	Silt loam	CL	A-4, A-6	0	0	100	100	95-100	95-100	22-35	7-15
	8-50	Silty clay loam, silt loam	CL	A-6	0	0	100	100	95-100	90-100	30-40	10-20
	50-60	Clay loam, silt loam, sandy loam, loam, stratified sandy loam to silt loam	CL, SC	A-4, A-6	0	0	90-100	75-100	75-95	40-80	20-35	8-20
244A:												
Hartsburg-------	0-17	Silty clay loam	CL, ML	A-7-6	0	0	100	100	97-100	95-100	40-46	15-19
	17-34	Silty clay loam, silt loam	CL	A-7-6, A-6	0	0	100	100	97-100	95-100	37-46	16-24
	34-60	Silt loam	CL	A-6, A-4	0	0	95-100	90-100	90-100	85-100	24-37	7-18
272A:												
Edgington-------	0-20	Silt loam	CL, ML, CL-ML	A-4, A-6	0	0	100	100	97-100	95-100	24-37	3-13
	20-31	Silt loam	CL, ML	A-6, A-4	0	0	100	100	97-100	95-100	24-37	7-18
	31-55	Silty clay loam	CL	A-7-6, A-6	0	0	100	100	97-100	95-100	37-46	16-24
	55-60	Silt loam	CL	A-6, A-4	0	0	100	100	97-100	95-100	24-37	7-18

Table 18.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification: Unified	Classification: AASHTO	Fragments: >10 inches	Fragments: 3-10 inches	Percentage passing sieve number--: 4	10	40	200	Liquid limit	Plas- ticity index
	In				Pct	Pct					Pct	
279B:												
Rozetta---------	0-7	Silt loam	CL	A-4, A-6	0	0	100	100	95-100	95-100	24-35	8-15
	7-11	Silt loam	CL, CL-ML	A-4, A-6	0	0	100	100	95-100	95-100	20-30	5-15
	11-55	Silty clay loam	CL	A-6, A-7-6	0	0	100	100	95-100	95-100	35-50	15-30
	55-60	Silt loam, silty clay loam	CL	A-4, A-6	0	0	100	100	95-100	85-100	25-40	7-20
279B2:												
Rozetta---------	0-6	Silt loam	CL, ML	A-6	0	0	100	100	97-100	95-100	30-35	10-20
	6-53	Silty clay loam	CL, ML	A-6, A-7-6	0	0	100	100	97-100	95-100	35-45	15-25
	53-65	Silt loam, silty clay loam	CL, ML, CL-ML	A-4, A-6	0	0	100	100	97-100	95-100	25-35	5-15
	65-80	Loam	CL, SC, SC-SM, CL-ML	A-4, A-6	0-1	0-3	85-100	85-100	70-90	45-70	22-33	4-14
322C2:												
Russell---------	0-7	Silt loam	CL, ML	A-6	0	0	100	97-100	95-100	85-100	29-37	11-18
	7-27	Silty clay loam	CL	A-7-6, A-6	0	0	100	97-100	95-100	85-100	37-46	16-25
	27-56	Clay loam	CL	A-6	0	0	90-100	85-100	75-95	55-85	33-39	12-18
	56-72	Loam	CL, CL-ML, SC, SC-SM	A-4, A-6	0-1	0-3	85-100	80-100	70-90	45-70	22-33	4-14
322D3:												
Russell---------	0-3	Silty clay loam	CL	A-7-6, A-6	0	0	100	97-100	92-100	86-98	37-46	16-23
	3-29	Silty clay loam	CL	A-7-6, A-6	0	0	100	97-100	92-100	86-98	37-46	16-25
	29-47	Clay loam	CL	A-6	0	0	90-100	85-100	75-95	55-85	33-39	12-18
	47-60	Loam	CL, CL-ML, SC, SC-SM	A-4, A-6	0-1	0-3	85-100	75-100	65-95	35-80	22-33	4-14
330A:												
Peotone---------	0-6	Silty clay loam	MH, CH	A-7-6	0	0	100	100	97-100	95-100	50-55	22-28
	6-28	Silty clay loam	MH, CH	A-7-6	0	0	100	100	97-100	95-100	50-55	22-28
	28-44	Silty clay loam, silty clay	MH, CH	A-7-6	0	0	100	97-100	95-100	85-100	50-55	25-34
	44-60	Silty clay loam	CL, CH	A-7-6, A-6	0	0	100	97-100	95-100	85-100	37-52	16-28
533.												
Urban land												
618F:												
Senachwine------	0-11	Silt loam	CL-ML, CL, ML	A-4	0	0	95-100	90-100	75-100	55-90	19-29	2-10
	11-17	Silty clay loam, clay loam	CL, ML	A-6	0	0	90-100	85-99	75-95	55-90	33-39	12-18
	17-32	Clay loam	CL	A-6	0	0	90-100	85-99	75-95	55-85	33-39	12-18
	32-40	Loam, clay loam	CL, SC	A-6, A-4	0	0-2	90-100	85-99	70-90	45-75	25-33	8-14
	40-60	Loam	CL-ML, CL, SC-SM	A-4	0-1	0-3	90-100	85-99	70-90	45-75	22-28	4-10

Table 18.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification: Unified	Classification: AASHTO	Fragments: >10 inches	Fragments: 3-10 inches	Percentage passing sieve number--: 4	10	40	200	Liquid limit	Plas- ticity index
	In				Pct	Pct					Pct	
618G:												
Senachwine------	0-5	Silt loam	CL-ML, CL, ML	A-4	0	0	95-100	90-100	75-100	55-90	19-29	2-10
	5-11	Silt loam	CL-ML, CL, ML	A-4	0	0	95-100	90-100	80-100	55-90	19-29	3-11
	11-30	Clay loam, silty clay loam	CL, ML	A-6	0	0	90-100	85-99	75-95	55-85	33-39	12-18
	30-38	Clay loam, loam	CL, ML, SC, SC-SM	A-6, A-4	0	0-2	90-100	85-99	70-90	45-75	25-33	8-14
	38-60	Loam	CL-ML, CL, ML, SC-SM	A-4	0-1	0-3	90-100	85-99	70-90	45-75	22-28	4-10
622C2:												
Wyanet----------	0-8	Silt loam	CL, ML	A-4, A-6	0	0	95-100	90-100	80-90	65-85	29-33	8-11
	8-26	Clay loam	CL	A-6	0	0	90-100	85-100	70-90	50-80	33-39	12-18
	26-34	Loam	CL, SC	A-6, A-4	0	0	90-100	85-100	70-90	45-70	25-33	8-14
	34-60	Loam	CL-ML, CL, SC, SC-SM	A-4	0	0-3	90-100	85-100	70-90	45-70	22-28	4-10
667B:												
Kaneville-------	0-7	Silt loam	CL, ML, CL-ML	A-6, A-4	0	0	100	100	97-100	95-100	24-37	6-16
	7-11	Silt loam	CL	A-6, A-4	0	0	100	100	97-100	95-100	24-37	7-18
	11-46	Silty clay loam	CL	A-7-6, A-6	0	0	100	100	97-100	95-100	37-46	16-25
	46-50	Loam	CL, SC	A-6, A-4	0	0	95-100	90-100	65-95	45-70	25-33	8-14
	50-60	Sandy loam	SC, SC-SM, CL-ML, CL, SM	A-4	0	0	95-100	90-98	65-95	35-60	22-28	4-10
726A:												
Elburn, sandy substratum-----	0-14	Silt loam	CL, ML, CL-ML	A-4, A-6	0	0	100	100	97-100	95-100	24-37	4-14
	14-39	Silty clay loam, silt loam	CL	A-6, A-7-6	0	0	100	100	97-100	95-100	37-46	16-24
	39-50	Stratified sandy loam to silt loam	CL	A-6	0	0	100	100	96-100	78-92	25-35	10-20
	50-80	Stratified sand to loamy sand	SP, SM, SP-SM	A-2-4, A-3, A-1-b	0	0	93-100	80-100	42-90	3-22	11-17	NP-4
737B:												
Tama, very deep to sand--------	0-16	Silt loam	ML, CL, CL-ML	A-4, A-6	0	0	100	100	95-100	90-100	25-45	5-20
	16-70	Silty clay loam, silt loam	CL	A-7-5, A-6, A-7-6	0	0	100	100	95-100	90-100	30-45	10-25
	70-80	Loamy sand, fine sand, loamy fine sand	SC-SM, SM, SP, SP-SM	A-2-4, A-3	0	0	100	90-100	60-95	2-35	0-20	NP-5

Table 18.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification: Unified	Classification: AASHTO	Fragments: >10 inches	Fragments: 3-10 inches	Percentage passing sieve number--: 4	10	40	200	Liquid limit	Plasticity index
	In				Pct	Pct					Pct	
748A:												
Plano, sandy substratum-----	0-16	Silt loam	CL, ML	A-6	0	0	100	100	97-100	95-100	29-37	10-16
	16-48	Silty clay loam	CL, ML	A-6, A-7-6	0	0	100	100	97-100	95-100	37-46	16-24
	48-51	Stratified sandy loam to silt loam	CL	A-6	0	0	100	100	96-100	78-92	25-35	10-20
	51-80	Stratified sand to loamy sand	SP, SM, SP-SM	A-2-4, A-3, A-1-b	0	0	93-100	80-100	42-90	3-22	11-17	NP-4
748B:												
Plano, sandy substratum-----	0-16	Silt loam	CL, ML	A-6	0	0	100	100	97-100	95-100	29-37	10-16
	16-40	Silty clay loam	CL, ML	A-6, A-7-6	0	0	100	100	97-100	95-100	37-46	16-24
	40-51	Stratified sandy loam to silt loam	CL	A-6	0	0	100	100	96-100	78-92	25-35	10-20
	51-80	Stratified sand to loamy sand	SP, SM, SP-SM	A-2-4, A-3, A-1-b	0	0	93-100	80-100	42-90	3-22	11-17	NP-4
749B:												
Buckhart, till substratum-----	0-13	Silt loam	CL, ML	A-6, A-7	0	0	100	100	100	95-100	35-45	10-20
	13-59	Silty clay loam, silt loam	CL	A-7-5, A-6, A-7-6	0	0	100	100	100	95-100	40-50	15-25
	59-69	Silt loam	CL	A-6	0	0	100	100	100	95-100	30-40	11-20
	69-80	Loam	CL, CL-ML, SC, SC-SM	A-4, A-6	0-1	0-3	90-100	85-95	70-90	45-70	22-33	4-14
802B:												
Orthents, loamy	0-10	Clay loam	CL, ML	A-6	0	0-5	95-100	90-100	85-95	50-80	30-40	10-15
	10-60	Clay loam, silty clay loam, loam	CL, ML, SC	A-6	0-1	0-5	95-100	85-100	85-95	40-85	30-40	10-20
802D:												
Orthents, loamy	0-10	Clay loam	CL, ML	A-6	0	0-5	95-100	90-100	85-95	50-80	30-40	10-15
	10-60	Clay loam, silty clay loam, loam	CL, SC	A-6	0-1	0-5	95-100	85-100	85-95	40-85	30-40	10-20
865.												
Pits, gravel												

Table 18.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification: Unified	Classification: AASHTO	Fragments: >10 inches	Fragments: 3-10 inches	Percentage passing sieve number--: 4	10	40	200	Liquid limit	Plasticity index
	In				Pct	Pct					Pct	
964F:												
Miami-----------	0-6	Loam	CL, ML	A-4, A-6	0	0-1	100	95-100	80-100	50-85	16-37	1-16
	6-11	Loam	CL, ML, CL-ML	A-4, A-6	0	0-1	100	95-100	80-100	50-85	21-33	3-13
	11-28	Clay loam	CL, ML	A-6	0	0-3	90-100	85-98	75-95	55-85	33-39	12-18
	28-47	Loam	CL-ML, SC, ML, SC-SM, CL	A-4	0-1	0-3	90-100	85-98	75-95	45-75	22-28	4-10
	47-60	Gravelly sandy loam	SC, SC-SM, SP-SC, SM	A-2-4, A-4, A-1-b	0-1	0-3	85-95	55-75	35-65	10-45	22-28	4-10
Hennepin--------	0-6	Silt loam	CL, ML	A-4, A-6	0	0	95-100	95-100	90-98	80-90	29-33	7-13
	6-19	Loam	CL, SC	A-4, A-6	0	0-1	90-100	80-100	70-90	45-70	25-33	8-13
	19-60	Loam	CL, CL-ML, SC, SC-SM	A-4, A-6	0	0-3	85-100	80-95	70-90	45-70	22-33	4-14
3073A:												
Ross------------	0-13	Silt loam, loam	CL-ML, ML, CL	A-4	0	0	90-100	90-100	80-100	65-85	20-35	NP-11
	13-43	Loam, silt loam	CL, CL-ML, ML	A-4, A-6	0	0	90-100	85-100	70-100	50-85	22-40	4-15
	43-60	Stratified sandy loam to silt loam	SC-SM, SM, SC, CL-ML, CL, ML	A-2-4, A-4	0	0-5	85-100	75-100	70-100	15-70	10-30	NP-10
3107A:												
Sawmill---------	0-10	Silty clay loam	CL, ML	A-7-6	0	0	100	97-100	95-100	85-100	40-46	16-21
	10-32	Silty clay loam	CL	A-7-6	0	0	100	97-100	95-100	85-100	40-46	16-21
	32-58	Silty clay loam	CL	A-7-6, A-6	0	0	100	97-100	85-100	80-95	37-46	16-22
	58-65	Silty clay loam, clay loam	CL	A-7-6, A-6	0	0	100	97-100	85-100	80-95	37-46	16-22
3451A:												
Lawson----------	0-8	Silt loam	CL, ML, CL-ML	A-4, A-6	0	0	100	97-100	95-100	85-100	20-40	5-15
	8-35	Silt loam, silty clay loam	CL, ML, CL-ML	A-4, A-6	0	0	100	97-100	95-100	85-100	20-40	5-15
	35-80	Stratified silt loam to loam, silt loam, silty clay loam	CL	A-6	0	0	100	95-100	85-100	65-100	29-40	11-20
7134C:												
Camden----------	0-7	Silt loam	CL, CL-ML, ML	A-4, A-6	0	0	100	100	95-100	95-100	24-37	6-15
	7-34	Silt loam, silty clay loam	CL	A-6	0	0	100	97-100	95-100	95-100	35-46	14-24
	34-43	Loam, clay loam	CL, SC	A-4, A-6	0	0	90-100	90-100	70-85	45-70	25-33	8-14
	43-80	Stratified loamy sand to sandy loam	SC-SM, SM	A-2-4, A-4, A-1-b	0	0	90-100	80-100	35-60	15-40	19-25	1-7

Table 18.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification: Unified	Classification: AASHTO	Fragments: >10 inches	Fragments: 3-10 inches	Percentage passing sieve number--: 4	10	40	200	Liquid limit	Plasticity index
	In				Pct	Pct					Pct	
7148B:												
Proctor---------	0-16	Silt loam	CL	A-6	0	0	100	100	95-100	90-100	25-40	10-20
	16-34	Silty clay loam	CL	A-6, A-7	0	0	100	95-100	85-100	85-100	25-50	10-25
	34-53	Clay loam, loam, sandy loam	CL, CL-ML,	A-2, A-4	0	0	90-100	85-100	75-100	30-80	20-45	5-25
	53-60	Stratified sandy loam to loamy sand	SC, SC-SM, SM	A-2-4, A-4	0	0	85-100	80-100	50-90	16-50	0-25	NP-10
7198A:												
Elburn----------	0-16	Silt loam	CL, CL-ML, ML	A-6, A-4	0	0	100	100	97-100	95-100	24-37	4-14
	16-49	Silty clay loam, silt loam	CL	A-6, A-7-6	0	0	100	100	97-100	95-100	37-46	16-24
	49-58	Stratified sandy loam to silt loam	CL-ML, CL	A-4, A-6	0	0	95-100	95-100	85-100	55-75	20-30	5-15
	58-62	Stratified sandy loam to loamy sand	SC-SM, SM	A-2-4, A-4	0	0	95-100	90-100	50-85	20-45	19-25	1-7
7199A:												
Plano-----------	0-14	Silt loam	CL, CL-ML, ML	A-4, A-6	0	0	100	100	95-100	90-100	20-30	5-15
	14-49	Silty clay loam, silt loam	CL	A-6	0	0	100	100	95-100	90-100	25-40	10-25
	49-60	Loam, clay loam, sandy loam	CL, ML, SC, SM	A-4, A-6	0	0-1	90-100	85-95	60-90	40-65	30-45	10-25
	60-72	Stratified loamy sand to silt loam	SC, SM, CL, ML, SC-SM, CL-ML	A-2-4, A-4	0	0-5	90-100	70-95	40-80	15-55	20-25	NP-10
7199B:												
Plano-----------	0-9	Silt loam	CL, ML	A-6	0	0	100	100	97-100	95-100	29-37	10-16
	9-46	Silty clay loam	CL	A-6, A-7-6	0	0	100	100	97-100	95-100	37-46	16-24
	46-53	Loam	CL, SC, SC-SM	A-6, A-4	0	0	90-100	80-100	70-90	45-70	25-33	8-14
	53-60	Sandy loam	SC-SM, SM	A-2-4, A-1-b, A-4	0	0	90-100	75-100	45-85	20-50	19-28	1-9
7242A:												
Kendall---------	0-9	Silt loam	CL, CL-ML	A-4, A-6	0	0	100	100	95-100	85-95	20-35	5-15
	9-14	Silt loam	CL, CL-ML	A-4, A-6	0	0	100	100	95-100	85-95	15-30	5-15
	14-54	Silty clay loam	CL	A-7-5, A-6, A-7-6	0	0	100	100	95-100	85-95	30-45	10-20
	54-60	Stratified sandy loam to clay loam	CL, CL-ML, SC, SC-SM	A-2, A-4	0	0-5	98-100	80-90	60-90	30-70	15-25	4-15

Table 18.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification: Unified	Classification: AASHTO	Fragments: >10 inches	Fragments: 3-10 inches	Percentage passing sieve number--: 4	10	40	200	Liquid limit	Plasticity index
	In				Pct	Pct					Pct	
7243B:												
St. Charles-----	0-8	Silt loam	CL	A-4, A-6	0	0	100	100	95-100	95-100	22-35	7-15
	8-50	Silty clay loam, silt loam	CL	A-6	0	0	100	100	95-100	90-100	30-40	10-20
	50-60	Stratified sandy loam to silt loam	CL, SC	A-4, A-6	0	0	90-100	75-100	75-95	40-80	20-35	8-20
8074A:												
Radford---------	0-21	Silt loam	CL, ML, CL-ML	A-4, A-6	0	0	100	97-100	95-100	85-100	24-37	5-15
	21-29	Stratified silt loam to silty clay loam	CL	A-6, A-4	0	0	100	97-100	95-100	85-100	24-37	7-17
	29-60	Silty clay loam	CL	A-7-6	0	0	100	97-100	95-100	85-100	40-46	16-21
8107A:												
Sawmill---------	0-26	Silty clay loam	CL, ML	A-7-6	0	0	100	97-100	95-100	85-100	40-46	16-21
	26-53	Silty clay loam	CL	A-7-6, A-6	0	0	100	97-100	85-100	80-95	37-46	16-22
	53-60	Stratified silty clay loam to clay loam	CL	A-7-6, A-6	0	0	100	97-100	85-100	80-95	37-46	16-22
8451A:												
Lawson----------	0-28	Silt loam	CL, CL-ML, ML	A-4, A-6	0	0	100	98-100	90-100	85-100	24-37	4-13
	28-60	Silt loam	CL, ML	A-4, A-6	0	0	100	98-100	90-100	85-100	24-37	7-17
8720A:												
Aetna-----------	0-8	Silt loam	CL, ML	A-6, A-4	0	0	100	97-100	95-100	85-100	24-37	7-17
	8-22	Stratified silt loam to silty clay loam	CL	A-6	0	0	100	97-100	95-100	85-100	35-40	15-21
	22-41	Silty clay loam, silt loam	CL, ML	A-7-6, A-7-5	0	0	100	97-100	95-100	85-100	40-46	15-19
	41-60	Silty clay loam	CL, CH	A-7-6, A-7-5, A-6	0	0	100	97-100	95-100	85-100	37-52	16-28

Table 19.--Physical Properties of the Soils

(Entries under "Erosion factors--T" apply to the entire profile. Entries under "Wind erodibility group" and "Wind erodibility index" apply only to the surface layer. Absence of an entry indicates that data were not estimated)

Map symbol and soil name	Depth	Sand	Silt	Clay	Moist bulk density	Permea-bility (Ksat)	Available water capacity	Linear extensi-bility	Organic matter	Erosion factors Kw	Kf	T	Wind erodi-bility group	Wind erodi-bility index
	In	Pct	Pct	Pct	g/cc	In/hr	In/in	Pct	Pct					
17A:														
Keomah---------------	0-11	0-7	67-84	16-26	1.35-1.45	0.6-2	0.19-0.24	0.0-2.9	1.0-3.0	.43	.43	5	5	56
	11-18	0-7	67-84	16-26	1.40-1.60	0.2-0.6	0.17-0.21	0.0-2.9	0.1-1.0	.49	.49			
	18-33	0-7	51-65	35-42	1.30-1.40	0.06-0.2	0.15-0.19	6.0-8.9	0.1-0.5	.37	.37			
	33-51	0-7	58-73	27-35	1.35-1.45	0.2-0.6	0.16-0.20	3.0-5.9	0.1-0.5	.37	.37			
	51-89	0-7	66-85	15-27	1.40-1.60	0.2-2	0.19-0.22	0.0-2.9	0.0-0.2	.49	.49			
27D2:														
Miami----------------	0-4	15-20	53-65	20-27	1.35-1.55	0.6-2	0.14-0.17	0.0-2.9	0.5-2.0	.43	.43	5	6	48
	4-12	15-20	45-58	27-35	1.45-1.65	0.6-2	0.14-0.17	3.0-5.9	0.2-0.5	.32	.32			
	12-28	20-40	25-53	27-35	1.50-1.70	0.6-2	0.14-0.17	3.0-5.9	0.2-0.5	.24	.28			
	28-33	20-40	25-53	27-35	1.50-1.70	0.6-2	0.14-0.17	3.0-5.9	0.1-0.5	.24	.28			
	33-60	30-50	30-50	10-20	1.65-1.85	0.2-0.6	0.06-0.12	0.0-2.9	0.0-0.3	.37	.43			
43A:														
Ipava----------------	0-10	2-7	66-83	15-27	1.25-1.45	0.6-2	0.22-0.24	0.0-2.9	3.5-5.0	.28	.28	5	6	48
	10-18	2-7	58-71	27-35	1.20-1.40	0.6-2	0.18-0.21	3.0-5.9	1.5-3.5	.24	.24			
	18-31	2-7	48-63	35-45	1.30-1.50	0.2-0.6	0.15-0.18	6.0-8.9	0.5-1.5	.37	.37			
	31-50	2-7	58-71	27-35	1.35-1.55	0.6-2	0.18-0.21	3.0-5.9	0.1-0.5	.37	.37			
	50-60	2-7	66-83	15-27	1.40-1.60	0.6-2	0.19-0.26	0.0-2.9	0.0-0.5	.49	.49			
45A:														
Denny----------------	0-8	0-7	66-80	20-27	1.25-1.45	0.6-2	0.22-0.24	0.0-2.9	2.0-3.0	.37	.37	5	6	48
	8-21	0-7	71-85	15-22	1.25-1.45	0.2-0.6	0.18-0.20	0.0-2.9	0.0-0.5	.43	.43			
	21-46	0-7	48-65	35-45	1.20-1.40	0.06-0.2	0.11-0.22	6.0-8.9	0.0-1.0	.37	.37			
	46-80	0-7	58-75	25-35	1.40-1.60	0.2-0.6	0.20-0.22	3.0-5.9	0.0-0.5	.43	.43			
56B2:														
Dana-----------------	0-7	2-15	58-78	20-27	1.40-1.60	0.6-2	0.16-0.21	0.0-2.9	1.5-3.5	.37	.37	5	6	48
	7-34	2-15	50-70	27-35	1.35-1.55	0.6-2	0.13-0.19	3.0-5.9	0.5-1.5	.37	.37			
	34-53	20-40	25-53	27-35	1.50-1.70	0.6-2	0.12-0.16	3.0-5.9	0.1-0.5	.24	.28			
	53-60	30-45	28-50	15-27	1.65-1.85	0.2-0.6	0.08-0.12	0.0-2.9	0.0-0.5	.37	.43			
67A:														
Harpster-------------	0-18	3-15	50-70	27-35	1.20-1.40	0.6-2	0.19-0.22	3.0-5.9	3.5-6.0	.24	.24	5	4L	86
	18-41	3-15	50-70	27-35	1.35-1.55	0.6-2	0.18-0.21	3.0-5.9	0.8-1.5	.37	.37			
	41-56	3-27	58-82	15-27	1.40-1.60	0.6-2	0.19-0.26	0.0-2.9	0.5-1.0	.49	.49			
	56-60	30-50	28-55	15-27	1.45-1.65	0.6-2	0.10-0.20	0.0-2.9	0.1-0.5	.37	.37			

Table 19.--Physical Properties of the Soils--Continued

Map symbol and soil name	Depth	Sand	Silt	Clay	Moist bulk density	Permea- bility (Ksat)	Available water capacity	Linear extensi- bility	Organic matter	Erosion factors Kw	Erosion factors Kf	Erosion factors T	Wind erodi- bility group	Wind erodi- bility index
	In	Pct	Pct	Pct	g/cc	In/hr	In/in	Pct	Pct					
68A:														
Sable---------------	0-23	1-7	58-72	27-35	1.15-1.35	0.6-2	0.17-0.22	3.0-5.9	4.5-6.0	.24	.24	5	6	48
	23-38	1-7	58-72	27-35	1.35-1.45	0.6-2	0.13-0.21	3.0-5.9	0.5-1.5	.37	.37			
	38-47	1-7	66-75	24-27	1.30-1.50	0.6-2	0.13-0.23	0.0-2.9	0.1-0.5	.49	.49			
	47-60	1-7	66-79	20-27	1.40-1.60	0.6-2	0.19-0.26	0.0-2.9	0.0-0.5	.55	.55			
86B:														
Osco----------------	0-14	0-7	67-80	20-26	1.25-1.30	0.6-2	0.22-0.24	3.0-5.9	3.0-4.0	.28	.28	5	6	48
	14-55	0-7	58-76	24-35	1.30-1.35	0.6-2	0.18-0.20	3.0-5.9	0.0-1.0	.37	.37			
	55-60	0-7	63-80	20-30	1.35-1.40	0.6-2	0.18-0.20	3.0-5.9	0.0-0.5	.49	.49			
134C2:														
Camden--------------	0-7	2-7	66-83	15-27	1.35-1.55	0.6-2	0.19-0.24	0.0-2.9	0.5-2.0	.43	.43	5	6	48
	7-34	2-7	58-71	25-35	1.35-1.55	0.6-2	0.18-0.21	3.0-5.9	0.1-0.5	.37	.37			
	34-43	30-50	28-48	22-30	1.45-1.65	0.6-2	0.11-0.14	0.0-2.9	0.0-0.5	.32	.32			
	43-80	65-80	10-25	5-15	1.45-1.65	2-6	0.06-0.10	0.0-2.9	0.0-0.3	.28	.28			
138A:														
Shiloh--------------	0-19	1-17	47-64	35-40	1.25-1.45	0.2-0.6	0.12-0.18	6.0-8.9	3.0-5.0	.24	.24	5	4	86
	19-48	1-17	40-64	35-45	1.30-1.50	0.2-0.6	0.11-0.17	6.0-8.9	1.0-3.5	.32	.32			
	48-68	1-15	43-66	33-45	1.35-1.55	0.06-0.2	0.11-0.17	6.0-8.9	0.2-1.0	.37	.37			
	68-86	10-33	30-53	35-50	1.40-1.60	0.06-0.2	0.10-0.16	6.0-8.9	0.2-1.0	.28	.28			
148B2:														
Proctor-------------	0-13	2-15	58-78	20-27	1.30-1.50	0.6-2	0.22-0.24	0.0-2.9	1.5-3.5	.37	.37	5	6	48
	13-32	2-15	50-70	27-35	1.35-1.55	0.6-2	0.13-0.16	3.0-5.9	0.5-1.5	.32	.32			
	32-49	30-50	28-50	20-28	1.45-1.65	0.6-2	0.11-0.19	0.0-2.9	0.1-1.5	.28	.28			
	49-60	45-75	15-30	10-25	1.50-1.70	0.6-2	0.07-0.14	0.0-2.9	0.1-0.5	.15	.20			
171B:														
Catlin--------------	0-11	1-7	66-81	18-27	1.30-1.40	0.6-2	0.19-0.23	0.0-2.9	2.5-4.0	.37	.37	5	6	48
	11-16	1-7	58-72	27-35	1.25-1.40	0.6-2	0.17-0.20	3.0-5.9	1.5-3.5	.37	.37			
	16-41	2-8	58-70	27-35	1.35-1.45	0.6-2	0.18-0.21	3.0-5.9	0.5-1.5	.37	.37			
	41-45	20-40	25-53	27-35	1.45-1.55	0.6-2	0.12-0.16	3.0-5.9	0.1-0.5	.28	.28			
	45-60	30-40	33-50	15-27	1.65-1.85	0.2-0.6	0.08-0.12	0.0-2.9	0.1-0.5	.37	.37			
171B2:														
Catlin--------------	0-8	2-7	66-78	20-27	1.40-1.60	0.6-2	0.18-0.22	0.0-2.9	1.5-3.5	.37	.37	5	6	48
	8-34	2-7	58-71	27-35	1.35-1.55	0.6-2	0.18-0.21	3.0-5.9	0.5-1.5	.28	.28			
	34-43	3-15	58-82	15-27	1.35-1.55	0.6-2	0.18-0.23	0.0-2.9	0.1-0.5	.37	.37			
	43-60	30-40	33-50	15-27	1.65-1.85	0.2-0.6	0.06-0.12	0.0-2.9	0.0-0.5	.37	.43			

Table 19.--Physical Properties of the Soils--Continued

Map symbol and soil name	Depth	Sand	Silt	Clay	Moist bulk density	Permea-bility (Ksat)	Available water capacity	Linear extensi-bility	Organic matter	Erosion factors Kw	Kf	T	Wind erodi-bility group	Wind erodi-bility index
	In	Pct	Pct	Pct	g/cc	In/hr	In/in	Pct	Pct					
171C2:														
Catlin	0-9	2-7	66-78	20-27	1.40-1.60	0.6-2	0.18-0.22	0.0-2.9	1.5-3.5	.37	.37	5	6	48
	9-40	2-7	58-71	27-35	1.35-1.55	0.6-2	0.18-0.21	3.0-5.9	0.5-1.5	.37	.37			
	40-50	3-15	58-72	25-35	1.30-1.50	0.6-2	0.18-0.21	3.0-5.9	0.1-0.5	.37	.37			
	50-55	20-40	25-53	27-35	1.50-1.70	0.6-2	0.12-0.16	3.0-5.9	0.1-0.5	.28	.32			
	55-60	20-40	30-53	27-30	1.65-1.85	0.2-0.6	0.06-0.12	3.0-5.9	0.0-0.5	.37	.37			
198A:														
Elburn	0-16	2-7	66-76	22-27	1.25-1.45	0.6-2	0.22-0.24	0.0-2.9	3.5-5.0	.28	.28	5	6	48
	16-49	2-7	58-73	25-35	1.35-1.55	0.6-2	0.18-0.21	3.0-5.9	0.5-1.5	.37	.37			
	49-58	30-55	30-55	15-20	1.45-1.65	0.6-2	0.14-0.17	0.0-2.9	0.1-0.5	.37	.37			
	58-62	60-80	10-25	5-15	1.50-1.70	2-6	0.06-0.10	0.0-2.9	0.1-0.5	.24	.24			
199A:														
Plano	0-14	0-10	63-82	18-27	1.10-1.30	0.6-2	0.22-0.24	0.0-2.9	3.0-4.0	.28	.28	5	6	48
	14-49	0-10	55-80	20-35	1.20-1.40	0.6-2	0.18-0.20	3.0-5.9	0.2-1.0	.37	.37			
	49-60	15-70	0-70	15-32	1.30-1.55	0.6-6	0.09-0.16	0.0-2.9	0.1-0.5	.32	.32			
	60-72	15-80	0-80	5-20	1.50-1.70	2-6	0.11-0.22	0.0-2.9	0.1-0.5	.28	.28			
199B2:														
Plano	0-9	2-7	66-78	20-27	1.40-1.60	0.6-2	0.18-0.22	0.0-2.9	1.5-3.5	.37	.37	5	6	48
	9-46	2-7	58-71	27-35	1.35-1.55	0.6-2	0.18-0.21	3.0-5.9	0.5-1.5	.43	.43			
	46-53	30-50	28-50	20-27	1.45-1.65	0.6-2	0.11-0.14	0.0-2.9	0.1-0.5	.37	.37			
	53-60	50-75	10-45	5-20	1.45-1.65	2-6	0.07-0.10	0.0-2.9	0.1-0.5	.15	.20			
233B:														
Birkbeck	0-4	2-7	66-78	20-27	1.40-1.60	0.6-2	0.17-0.21	0.0-2.9	1.0-3.0	.43	.43	5	5	56
	4-9	2-7	66-83	15-27	1.40-1.60	0.6-2	0.17-0.21	0.0-2.9	0.3-1.0	.49	.49			
	9-54	2-7	58-71	27-35	1.35-1.55	0.6-2	0.16-0.20	3.0-5.9	0.2-0.5	.37	.37			
	54-60	30-50	28-50	20-27	1.45-1.65	0.6-2	0.11-0.14	0.0-2.9	0.1-0.5	.32	.32			
	60-68	30-50	28-50	17-27	1.65-1.85	0.2-0.6	0.08-0.12	0.0-2.9	0.1-0.5	.37	.37			
233C2:														
Birkbeck	0-7	2-7	66-78	20-27	1.40-1.60	0.6-2	0.17-0.21	0.0-2.9	0.5-2.5	.43	.43	5	6	48
	7-46	2-7	58-71	27-35	1.35-1.55	0.6-2	0.16-0.20	3.0-5.9	0.1-0.5	.37	.37			
	46-57	30-50	28-50	20-27	1.45-1.65	0.6-2	0.11-0.14	0.0-2.9	0.1-0.5	.32	.37			
	57-60	30-50	28-50	17-27	1.65-1.85	0.2-0.6	0.06-0.12	0.0-2.9	0.0-0.5	.37	.43			
243B:														
St. Charles	0-8	0-10	63-80	20-27	1.15-1.30	0.6-2	0.22-0.24	0.0-2.9	1.0-3.0	.43	.43	5	5	56
	8-50	0-10	55-73	25-35	1.30-1.50	0.6-2	0.18-0.20	3.0-5.9	0.0-0.5	.37	.37			
	50-60	30-50	33-50	15-30	1.30-1.50	0.6-6	0.11-0.16	0.0-2.9	0.0-0.5	.32	.32			

Table 19.--Physical Properties of the Soils--Continued

Map symbol and soil name	Depth	Sand	Silt	Clay	Moist bulk density	Permea- bility (Ksat)	Available water capacity	Linear extensi- bility	Organic matter	Erosion factors Kw	Kf	T	Wind erodi- bility group	Wind erodi- bility index
	In	Pct	Pct	Pct	g/cc	In/hr	In/in	Pct	Pct					
244A:														
Hartsburg-----------	0-17	2-7	58-71	27-35	1.20-1.40	0.6-2	0.12-0.18	3.0-5.9	4.5-6.0	.24	.24	5	6	48
	17-34	2-7	58-71	25-35	1.35-1.55	0.6-2	0.13-0.19	3.0-5.9	0.5-2.0	.37	.37			
	34-60	3-15	66-82	15-27	1.45-1.65	0.6-2	0.16-0.22	0.0-2.9	0.1-0.5	.49	.49			
272A:														
Edgington-----------	0-20	2-7	66-83	15-27	1.20-1.40	0.6-2	0.22-0.26	0.0-2.9	4.5-6.0	.28	.28	5	6	48
	20-31	2-7	66-83	15-27	1.40-1.60	0.2-0.6	0.17-0.21	0.0-2.9	0.1-1.0	.43	.43			
	31-55	2-7	58-71	27-35	1.35-1.55	0.6-2	0.18-0.21	3.0-5.9	0.5-1.5	.37	.37			
	55-60	2-7	66-83	15-27	1.40-1.60	0.6-2	0.19-0.26	0.0-2.9	0.0-0.5	.49	.49			
279B:														
Rozetta-------------	0-7	0-7	66-85	15-27	1.20-1.40	0.6-2	0.22-0.24	0.0-2.9	1.0-3.0	.43	.43	5	5	56
	7-11	0-7	66-88	12-27	1.20-1.40	0.6-2	0.22-0.24	0.0-2.9	0.1-1.0	.49	.49			
	11-55	0-7	58-73	27-35	1.35-1.55	0.6-2	0.18-0.22	3.0-5.9	0.0-0.5	.37	.37			
	55-60	0-7	63-80	20-30	1.40-1.60	0.6-2	0.20-0.22	0.0-2.9	0.0-0.5	.49	.49			
279B2:														
Rozetta-------------	0-6	0-7	66-80	20-27	1.20-1.40	0.6-2	0.17-0.21	0.0-2.9	0.5-2.0	.43	.43	5	6	48
	6-53	0-7	58-73	27-35	1.35-1.55	0.6-2	0.16-0.20	3.0-5.9	0.3-0.8	.43	.43			
	53-65	0-7	66-85	15-27	1.40-1.60	0.2-0.6	0.19-0.26	0.0-2.9	0.1-0.5	.49	.49			
	65-80	30-50	28-50	18-27	1.65-1.85	0.2-0.6	0.08-0.12	0.0-2.9	0.1-0.3	.37	.37			
322C2:														
Russell-------------	0-7	3-15	58-77	20-27	1.40-1.60	0.6-2	0.15-0.21	0.0-2.9	0.5-2.0	.43	.43	5	6	48
	7-27	3-15	50-70	27-35	1.35-1.55	0.6-2	0.13-0.19	3.0-5.9	0.1-0.5	.43	.43			
	27-56	20-40	25-53	27-33	1.50-1.70	0.6-2	0.12-0.16	3.0-5.9	0.1-0.5	.24	.28			
	56-72	30-50	28-50	12-27	1.65-1.85	0.2-0.6	0.08-0.12	0.0-2.9	0.1-0.3	.37	.43			
322D3:														
Russell-------------	0-3	3-15	50-70	27-35	1.40-1.60	0.6-2	0.12-0.16	3.0-5.9	0.3-1.0	.43	.43	4	6	48
	3-29	3-15	50-70	27-35	1.35-1.55	0.6-2	0.14-0.18	3.0-5.9	0.1-0.5	.43	.43			
	29-47	20-40	25-53	27-33	1.50-1.70	0.6-2	0.12-0.16	3.0-5.9	0.1-0.5	.24	.28			
	47-60	30-50	28-50	12-27	1.65-1.85	0.2-0.6	0.08-0.12	0.0-2.9	0.1-0.3	.37	.43			
330A:														
Peotone-------------	0-6	2-7	53-63	35-40	1.25-1.45	0.2-0.6	0.12-0.18	6.0-8.9	4.5-7.0	.24	.24	5	4	86
	6-28	2-7	53-63	35-40	1.35-1.55	0.2-0.6	0.12-0.18	6.0-8.9	2.0-4.0	.24	.24			
	28-44	3-15	53-62	35-40	1.30-1.50	0.2-0.6	0.11-0.17	6.0-8.9	1.5-3.5	.32	.32			
	44-60	3-15	53-70	27-40	1.30-1.50	0.2-0.6	0.11-0.17	3.0-8.9	0.1-1.0	.37	.37			
533.														
Urban land														

Table 19.--Physical Properties of the Soils--Continued

Map symbol and soil name	Depth	Sand	Silt	Clay	Moist bulk density	Permea-bility (Ksat)	Available water capacity	Linear extensi-bility	Organic matter	Erosion factors Kw	Kf	T	Wind erodi-bility group	Wind erodi-bility index
	In	Pct	Pct	Pct	g/cc	In/hr	In/in	Pct	Pct					
618F:														
Senachwine----------	0-11	15-40	50-72	10-20	1.40-1.60	0.6-2	0.16-0.22	0.0-2.9	1.0-2.5	.37	.37	5	5	56
	11-17	15-40	25-53	27-35	1.45-1.65	0.6-2	0.14-0.17	3.0-5.9	0.3-0.8	.32	.32			
	17-32	20-40	25-53	27-35	1.45-1.65	0.6-2	0.14-0.17	3.0-5.9	0.1-0.5	.24	.28			
	32-40	30-50	28-50	20-27	1.45-1.65	0.6-2	0.11-0.14	0.0-2.9	0.1-0.5	.32	.37			
	40-60	30-50	30-50	10-20	1.65-1.85	0.2-0.6	0.08-0.12	0.0-2.9	0.1-0.3	.37	.43			
618G:														
Senachwine----------	0-5	15-40	50-72	10-20	1.40-1.60	0.6-2	0.16-0.22	0.0-2.9	1.0-2.5	.37	.37	5	5	56
	5-11	15-40	50-74	10-20	1.40-1.60	0.6-2	0.16-0.22	0.0-2.9	0.3-0.8	.49	.49			
	11-30	15-40	25-53	27-35	1.45-1.65	0.6-2	0.14-0.17	3.0-5.9	0.1-0.5	.24	.28			
	30-38	30-50	28-50	20-30	1.45-1.65	0.6-2	0.11-0.14	0.0-2.9	0.1-0.5	.32	.37			
	38-60	30-50	30-50	10-20	1.65-1.85	0.2-0.6	0.08-0.12	0.0-2.9	0.0-0.5	.37	.43			
622C2:														
Wyanet--------------	0-8	15-30	50-65	20-27	1.40-1.60	0.6-2	0.14-0.22	0.0-2.9	1.5-3.5	.28	.28	5	6	48
	8-26	20-40	25-53	27-35	1.50-1.70	0.6-2	0.12-0.16	3.0-5.9	0.5-1.5	.32	.37			
	26-34	30-50	28-50	20-27	1.45-1.65	0.6-2	0.11-0.14	0.0-2.9	0.1-0.5	.32	.32			
	34-60	30-50	28-50	10-27	1.65-1.85	0.2-0.6	0.06-0.12	0.0-2.9	0.0-0.5	.37	.37			
667B:														
Kaneville-----------	0-7	2-7	66-83	15-27	1.25-1.45	0.6-2	0.19-0.24	0.0-2.9	1.5-3.5	.37	.37	5	5	56
	7-11	2-7	66-83	15-27	1.40-1.60	0.6-2	0.17-0.21	0.0-2.9	0.3-0.8	.49	.49			
	11-46	2-7	59-71	27-34	1.35-1.55	0.6-2	0.16-0.20	3.0-5.9	0.1-0.5	.37	.37			
	46-50	30-50	28-50	20-27	1.45-1.65	0.6-2	0.11-0.16	0.0-2.9	0.1-0.5	.24	.24			
	50-60	52-60	20-36	12-20	1.50-1.70	2-6	0.07-0.12	0.0-2.9	0.0-0.3	.24	.32			
726A:														
Elburn, sandy substratum---------	0-14	2-7	66-76	22-27	1.25-1.45	0.6-2	0.22-0.24	0.0-2.9	3.5-5.0	.28	.28	4	6	48
	14-39	2-7	58-73	25-35	1.35-1.55	0.6-2	0.18-0.21	3.0-5.9	0.5-1.5	.37	.37			
	39-50	15-55	45-67	18-27	1.45-1.65	0.6-2	0.13-0.17	0.0-2.9	0.1-0.5	.43	.43			
	50-80	80-95	1-13	2-10	1.60-1.80	6-20	0.05-0.10	0.0-2.9	0.0-0.2	.05	.05			
737B:														
Tama, very deep to sand---------------	0-16	0-10	63-75	20-27	1.25-1.45	0.6-2	0.23-0.26	0.0-2.9	3.0-4.0	.28	.28	5	6	48
	16-70	0-10	55-76	24-35	1.35-1.60	0.6-2	0.14-0.24	3.0-5.9	0.0-1.0	.37	.37			
	70-80	75-97	1-18	1-10	1.40-1.90	6-20	0.08-0.11	0.0-2.9	0.0-0.5	.15	.15			
748A:														
Plano, sandy substratum---------	0-16	2-7	66-78	20-27	1.40-1.60	0.6-2	0.18-0.22	0.0-2.9	3.0-4.0	.28	.28	4	6	48
	16-48	2-7	58-71	27-35	1.35-1.55	0.6-2	0.18-0.21	3.0-5.9	0.5-1.5	.37	.37			
	48-51	15-55	35-67	18-27	1.45-1.65	0.6-2	0.13-0.17	0.0-2.9	0.1-0.5	.43	.43			
	51-80	80-95	1-13	2-10	1.60-1.80	6-20	0.05-0.10	0.0-2.9	0.0-0.2	.05	.05			

Table 19.--Physical Properties of the Soils--Continued

Map symbol and soil name	Depth	Sand	Silt	Clay	Moist bulk density	Permeability (Ksat)	Available water capacity	Linear extensibility	Organic matter	Erosion factors Kw	Kf	T	Wind erodibility group	Wind erodibility index
	In	Pct	Pct	Pct	g/cc	In/hr	In/in	Pct	Pct					
748B:														
Plano, sandy substratum---------	0-16	2-7	66-78	20-27	1.40-1.60	0.6-2	0.18-0.22	0.0-2.9	3.0-4.0	.28	.28	4	6	48
	16-40	2-7	58-71	27-35	1.35-1.55	0.6-2	0.18-0.21	3.0-5.9	0.5-1.5	.37	.37			
	40-51	15-55	35-67	18-27	1.45-1.65	0.6-2	0.13-0.17	0.0-2.9	0.1-0.5	.43	.43			
	51-80	80-95	1-13	2-10	1.60-1.80	6-20	0.05-0.10	0.0-2.9	0.0-0.2	.05	.05			
749B:														
Buckhart, till substratum---------	0-13	0-7	67-80	20-26	1.25-1.30	0.6-2	0.22-0.24	3.0-5.9	3.0-4.0	.28	.28	5	6	48
	13-59	0-7	58-75	25-35	1.30-1.35	0.6-2	0.18-0.20	3.0-5.9	0.2-1.0	.37	.37			
	59-69	0-7	66-82	18-27	1.35-1.45	0.6-2	0.20-0.22	3.0-5.9	0.1-0.5	.49	.49			
	69-80	30-40	33-50	15-27	1.65-1.85	0.2-0.6	0.08-0.12	0.0-2.9	0.1-0.5	.37	.43			
802B:														
Orthents, loamy-----	0-10	20-45	20-53	27-35	1.50-1.70	0.2-0.6	0.18-0.20	3.0-5.9	0.5-2.0	.43	.43	5	6	48
	10-60	15-50	20-63	22-30	1.40-1.75	0.06-2	0.15-0.20	3.0-5.9	0.0-1.0	.43	.43			
802D:														
Orthents, loamy-----	0-10	20-45	20-53	27-35	1.50-1.70	0.2-0.6	0.18-0.20	3.0-5.9	0.5-2.0	.43	.43	5	6	48
	10-60	15-50	20-63	22-30	1.40-1.75	0.06-2	0.15-0.20	3.0-5.9	0.0-0.5	.43	.43			
865.														
Pits, gravel														
964F:														
Miami---------------	0-6	26-52	28-50	8-27	1.40-1.60	0.6-2	0.13-0.17	0.0-2.9	1.0-2.5	.28	.28	5	5	56
	6-11	26-52	28-50	8-27	1.40-1.60	0.6-2	0.10-0.15	0.0-2.9	0.1-0.8	.32	.32			
	11-28	20-40	25-53	27-35	1.50-1.70	0.6-2	0.12-0.16	3.0-5.9	0.1-0.5	.32	.32			
	28-47	30-50	30-50	10-20	1.65-1.85	0.2-0.6	0.08-0.12	0.0-2.9	0.1-0.5	.43	.43			
	47-60	55-80	5-30	10-20	1.60-1.80	0.6-2	0.06-0.12	0.0-2.9	0.0-0.5	.05	.10			
Hennepin------------	0-6	15-20	53-65	20-27	1.45-1.65	0.6-2	0.14-0.17	0.0-2.9	1.0-2.5	.37	.37	3	6	48
	6-19	30-50	28-50	20-27	1.55-1.75	0.6-2	0.11-0.15	0.0-2.9	0.1-0.5	.32	.32			
	19-60	30-50	28-50	18-27	1.65-1.85	0.2-0.6	0.06-0.12	0.0-2.9	0.0-0.5	.43	.43			
3073A:														
Ross----------------	0-13	20-45	28-65	15-27	1.20-1.45	0.6-2	0.19-0.24	0.0-2.9	2.0-4.0	.32	.32	5	5	56
	13-43	20-45	28-62	18-27	1.20-1.50	0.6-2	0.16-0.22	0.0-2.9	1.0-3.0	.28	.28			
	43-60	40-70	10-55	5-20	1.35-1.60	0.6-6	0.05-0.18	0.0-2.9	0.5-1.0	.28	.28			
3107A:														
Sawmill-------------	0-10	3-15	58-70	27-35	1.25-1.45	0.6-2	0.12-0.18	3.0-5.9	4.5-7.0	.28	.28	5	6	48
	10-32	3-15	58-70	27-35	1.25-1.45	0.6-2	0.12-0.18	3.0-5.9	4.5-7.0	.28	.28			
	32-58	5-20	45-68	27-35	1.30-1.50	0.6-2	0.12-0.18	3.0-5.9	1.5-3.5	.32	.32			
	58-65	5-25	40-70	25-35	1.30-1.50	0.6-2	0.12-0.18	3.0-5.9	0.8-3.5	.32	.32			

Table 19.--Physical Properties of the Soils--Continued

Map symbol and soil name	Depth	Sand	Silt	Clay	Moist bulk density	Permea- bility (Ksat)	Available water capacity	Linear extensi- bility	Organic matter	Erosion factors Kw	Kf	T	Wind erodi- bility group	Wind erodi- bility index
	In	Pct	Pct	Pct	g/cc	In/hr	In/in	Pct	Pct					
3451A:														
Lawson--------------	0-8	3-15	58-79	18-27	1.25-1.45	0.6-2	0.16-0.22	0.0-2.9	3.5-7.0	.32	.32	5	6	48
	8-35	3-15	58-79	18-30	1.30-1.50	0.6-2	0.16-0.22	0.0-2.9	3.0-5.0	.32	.32			
	35-80	15-30	45-65	20-30	1.40-1.60	0.6-2	0.18-0.20	0.0-2.9	0.5-1.0	.37	.37			
7134C:														
Camden--------------	0-7	2-7	66-83	15-27	1.35-1.55	0.6-2	0.19-0.24	0.0-2.9	1.0-2.5	.43	.43	5	5	56
	7-34	2-7	58-71	25-35	1.35-1.55	0.6-2	0.18-0.21	3.0-5.9	0.1-0.8	.37	.37			
	34-43	30-50	28-48	22-30	1.45-1.65	0.6-2	0.11-0.14	0.0-2.9	0.0-0.5	.32	.32			
	43-80	65-80	10-25	5-15	1.45-1.65	2-6	0.06-0.10	0.0-2.9	0.0-0.5	.28	.28			
7148B:														
Proctor-------------	0-16	0-10	66-82	18-27	1.10-1.30	0.6-2	0.22-0.24	0.0-2.9	3.0-4.0	.28	.28	5	6	48
	16-34	0-10	58-73	27-35	1.20-1.45	0.6-2	0.18-0.20	3.0-5.9	0.2-1.0	.37	.37			
	34-53	15-54	28-67	18-30	1.30-1.55	0.6-2	0.13-0.16	0.0-2.9	0.1-0.5	.32	.32			
	53-60	65-80	15-30	5-15	1.40-1.70	2-6	0.08-0.10	0.0-2.9	0.0-0.5	.24	.24			
7198A:														
Elburn--------------	0-16	2-7	66-76	22-27	1.25-1.45	0.6-2	0.22-0.24	0.0-2.9	3.5-5.0	.28	.28	5	6	48
	16-49	2-7	58-73	25-35	1.35-1.55	0.6-2	0.18-0.21	3.0-5.9	0.5-1.5	.37	.37			
	49-58	30-55	30-55	15-20	1.45-1.65	0.6-2	0.14-0.17	0.0-2.9	0.1-0.5	.37	.37			
	58-62	60-80	10-25	5-15	1.50-1.70	2-6	0.06-0.10	0.0-2.9	0.1-0.5	.24	.24			
7199A:														
Plano---------------	0-14	0-10	63-82	18-27	1.10-1.30	0.6-2	0.22-0.24	0.0-2.9	3.0-4.0	.28	.28	5	6	48
	14-49	0-10	55-80	20-35	1.20-1.40	0.6-2	0.18-0.20	3.0-5.9	0.2-1.0	.37	.37			
	49-60	15-70	0-70	15-32	1.30-1.55	0.6-6	0.09-0.16	0.0-2.9	0.1-0.5	.32	.32			
	60-72	15-80	0-80	5-20	1.50-1.70	2-6	0.11-0.22	0.0-2.9	0.1-0.5	.28	.28			
7199B:														
Plano---------------	0-9	2-7	66-78	20-27	1.40-1.60	0.6-2	0.18-0.22	0.0-2.9	3.0-4.0	.28	.28	5	6	48
	9-46	2-7	58-71	27-35	1.35-1.55	0.6-2	0.18-0.21	3.0-5.9	0.5-1.5	.43	.43			
	46-53	30-50	28-50	20-27	1.45-1.65	0.6-2	0.11-0.14	0.0-2.9	0.1-0.5	.37	.37			
	53-60	50-75	10-45	5-20	1.45-1.65	2-6	0.07-0.10	0.0-2.9	0.1-0.5	.15	.20			
7242A:														
Kendall-------------	0-9	0-10	63-80	20-27	1.15-1.30	0.6-2	0.22-0.24	0.0-2.9	1.0-3.0	.43	.43	5	6	48
	9-14	0-10	65-82	18-25	1.25-1.45	0.6-2	0.20-0.22	0.0-2.9	0.1-1.0	.49	.49			
	14-54	0-10	55-73	27-35	1.30-1.50	0.6-2	0.18-0.20	3.0-5.9	0.0-0.5	.37	.37			
	54-60	42-65	7-30	5-28	1.55-1.70	0.6-6	0.11-0.20	0.0-2.9	0.0-0.5	.28	.28			
7243B:														
St. Charles---------	0-8	0-10	63-80	20-27	1.15-1.30	0.6-2	0.22-0.24	0.0-2.9	1.0-2.5	.43	.43	5	5	56
	8-50	0-10	55-73	25-35	1.30-1.50	0.6-2	0.18-0.20	3.0-5.9	0.0-0.5	.37	.37			
	50-60	30-50	33-50	15-30	1.30-1.50	0.6-6	0.11-0.16	0.0-2.9	0.0-0.5	.32	.32			

Table 19.--Physical Properties of the Soils--Continued

Map symbol and soil name	Depth	Sand	Silt	Clay	Moist bulk density	Permea-bility (Ksat)	Available water capacity	Linear extensi-bility	Organic matter	Erosion factors Kw	Erosion factors Kf	Erosion factors T	Wind erodi-bility group	Wind erodi-bility index
	In	Pct	Pct	Pct	g/cc	In/hr	In/in	Pct	Pct					
8074A:														
Radford-------------	0-21	3-15	58-79	18-27	1.30-1.50	0.6-2	0.19-0.23	0.0-2.9	3.5-5.0	.32	.32	5	6	48
	21-29	3-15	58-79	18-27	1.30-1.50	0.6-2	0.19-0.23	0.0-2.9	1.5-3.5	.49	.49			
	29-60	3-15	58-70	27-35	1.25-1.45	0.6-2	0.19-0.22	3.0-5.9	4.5-7.0	.28	.28			
8107A:														
Sawmill-------------	0-26	2-15	58-70	27-35	1.25-1.45	0.6-2	0.19-0.22	3.0-5.9	4.0-7.0	.28	.28	5	6	48
	26-53	5-20	45-68	27-35	1.30-1.50	0.6-2	0.17-0.20	3.0-5.9	2.0-7.0	.32	.32			
	53-60	5-21	44-68	27-35	1.30-1.50	0.6-2	0.17-0.20	3.0-5.9	1.0-3.0	.28	.28			
8451A:														
Lawson--------------	0-28	3-15	58-79	18-27	1.25-1.45	0.6-2	0.22-0.24	0.0-2.9	3.5-5.0	.32	.32	5	6	48
	28-60	3-15	58-79	18-27	1.30-1.50	0.6-2	0.18-0.23	0.0-2.9	0.5-1.5	.32	.32			
8720A:														
Aetna---------------	0-8	3-15	58-79	15-27	1.35-1.55	0.6-2	0.19-0.24	0.0-2.9	1.0-2.5	.37	.37	5	6	48
	8-22	3-15	50-72	25-35	1.35-1.55	0.6-2	0.17-0.20	3.0-5.9	0.1-0.5	.37	.37			
	22-41	3-15	50-72	25-35	1.20-1.40	0.6-2	0.19-0.22	3.0-5.9	4.5-6.0	.37	.37			
	41-60	3-15	45-70	27-40	1.30-1.50	0.2-0.6	0.18-0.21	3.0-5.9	0.5-1.5	.32	.32			

Table 20.--Chemical Properties of the Soils

(Absence of an entry indicates that data were not estimated)

Map symbol and soil name	Depth	Cation-exchange capacity	Effective cation-exchange capacity	Soil reaction	Calcium carbon-ate	Organic matter
	In	meq/100 g	meq/100 g	pH	Pct	Pct
17A:						
Keomah---------------	0-11	10-26	---	5.6-7.3	0	1.0-3.0
	11-18	9.0-24	---	5.1-7.3	0	0.1-1.0
	18-33	28-41	---	5.1-6.5	0	0.1-0.5
	33-51	16-29	---	5.1-6.5	0	0.1-0.5
	51-89	8.0-18	---	6.1-7.3	0-15	0.0-0.2
27D2:						
Miami----------------	0-4	14-27	---	6.1-7.3	0	0.5-2.0
	4-12	12-24	---	5.6-7.3	0	0.2-0.5
	12-28	12-24	---	5.6-7.3	0	0.2-0.5
	28-33	12-24	---	6.6-7.8	0-10	0.1-0.5
	33-60	4.0-13	---	7.4-8.4	15-40	0.0-0.3
43A:						
Ipava----------------	0-10	16-32	---	5.6-7.3	0	3.5-5.0
	10-18	25-38	---	5.6-7.3	0	1.5-3.5
	18-31	22-39	---	5.6-7.3	0	0.5-1.5
	31-50	17-31	---	6.6-7.8	0-5	0.1-0.5
	50-60	9.0-22	---	7.4-8.4	0-15	0.0-0.5
45A:						
Denny----------------	0-8	18-24	---	5.6-7.3	0	2.0-3.0
	8-21	9.0-15	---	5.6-6.5	0	0.0-0.5
	21-46	21-29	---	5.6-6.5	0	0.0-1.0
	46-80	4.5-18	---	6.1-7.8	0	0.0-0.5
56B2:						
Dana-----------------	0-7	14-28	---	5.6-6.5	0	1.5-3.5
	7-34	18-27	---	5.1-7.3	0	0.5-1.5
	34-53	12-24	---	5.6-7.8	0-5	0.1-0.5
	53-60	4.0-16	---	7.4-8.4	15-40	0.0-0.5
67A:						
Harpster-------------	0-18	27-40	---	7.9-8.4	15-40	3.5-6.0
	18-41	18-27	---	7.4-8.4	5-40	0.8-1.5
	41-56	9.0-23	---	7.9-8.4	5-40	0.5-1.0
	56-60	4.0-16	---	7.9-8.4	10-40	0.1-0.5
68A:						
Sable----------------	0-23	27-40	---	5.6-6.5	0	4.5-6.0
	23-38	17-31	---	6.1-7.3	0	0.5-1.5
	38-47	10-25	---	6.6-7.8	0-5	0.1-0.5
	47-60	9.0-23	---	7.4-8.4	0-15	0.0-0.5
86B:						
Osco-----------------	0-14	18-25	---	5.1-7.3	0	3.0-4.0
	14-55	15-23	---	5.1-6.5	0	0.0-1.0
	55-60	12-18	---	5.6-7.8	0-15	0.0-0.5
134C2:						
Camden---------------	0-7	12-22	---	5.1-7.3	0	0.5-2.0
	7-34	19-27	---	5.1-7.3	0	0.1-0.5
	34-43	15-23	---	5.1-7.3	0	0.0-0.5
	43-80	4.1-12	---	6.1-7.8	0-25	0.0-0.3

Table 20.--Chemical Properties of the Soils--Continued

Map symbol and soil name	Depth	Cation-exchange capacity	Effective cation-exchange capacity	Soil reaction	Calcium carbon-ate	Organic matter
	In	meq/100 g	meq/100 g	pH	Pct	Pct
138A:						
Shiloh---------------	0-19	29-33	---	6.1-7.3	0	3.0-5.0
	19-48	27-36	---	6.1-7.3	0	1.0-3.5
	48-68	24-34	---	6.1-7.3	0	0.2-1.0
	68-86	26-38	---	6.1-7.8	0	0.2-1.0
148B2:						
Proctor--------------	0-13	14-28	---	5.6-7.3	0	1.5-3.5
	13-32	18-27	---	5.6-7.3	0	0.5-1.5
	32-49	9.0-19	---	6.1-7.3	0-10	0.1-1.5
	49-60	6.0-15	---	6.1-7.8	0-15	0.1-0.5
171B:						
Catlin---------------	0-11	14-30	---	6.1-7.3	0	2.5-4.0
	11-16	22-29	---	5.6-7.3	0	1.5-3.5
	16-41	21-28	---	5.6-7.3	0	0.5-1.5
	41-45	11-22	---	7.4-8.4	0-5	0.1-0.5
	45-60	4.0-16	---	7.4-8.4	15-40	0.1-0.5
171B2:						
Catlin---------------	0-8	14-28	---	6.1-7.3	0	1.5-3.5
	8-34	17-31	---	6.1-7.3	0	0.5-1.5
	34-43	10-25	---	6.1-7.3	0	0.1-0.5
	43-60	4.0-16	---	7.4-8.4	15-40	0.0-0.5
171C2:						
Catlin---------------	0-9	14-28	---	6.1-7.3	0	1.5-3.5
	9-40	17-31	---	5.6-6.5	0	0.5-1.5
	40-50	16-27	---	6.1-7.3	0	0.1-0.5
	50-55	11-22	---	6.6-7.8	0-5	0.1-0.5
	55-60	10-22	---	7.4-8.4	15-40	0.0-0.5
198A:						
Elburn---------------	0-16	16-32	---	6.1-7.3	0	3.5-5.0
	16-49	17-31	---	5.6-7.8	0	0.5-1.5
	49-58	6.0-13	---	6.6-7.8	0-5	0.1-0.5
	58-62	2.0-10	---	6.6-7.8	0-15	0.1-0.5
199A:						
Plano----------------	0-14	17-26	---	6.1-7.3	0	3.0-4.0
	14-49	15-30	---	5.1-7.3	0	0.2-1.0
	49-60	9.0-20	---	5.6-7.8	0	0.1-0.5
	60-72	6.0-13	---	5.6-8.4	0-20	0.1-0.5
199B2:						
Plano----------------	0-9	14-28	---	6.1-7.3	0	1.5-3.5
	9-46	17-31	---	5.6-7.3	0	0.5-1.5
	46-53	9.0-19	---	6.6-7.8	0-5	0.1-0.5
	53-60	3.0-15	---	6.6-7.8	0-15	0.1-0.5
233B:						
Birkbeck-------------	0-4	13-24	---	5.6-7.3	0	1.0-3.0
	4-9	---	7.9-14	4.5-6.5	0	0.3-1.0
	9-54	---	13-17	4.5-7.3	0	0.2-0.5
	54-60	7.0-17	---	6.1-7.8	0-5	0.1-0.5
	60-68	4.0-16	---	7.4-8.4	15-40	0.1-0.5
233C2:						
Birkbeck-------------	0-7	13-24	---	5.6-7.3	0	0.5-2.5
	7-46	---	13-17	4.5-7.3	0	0.1-0.5
	46-57	9.0-19	---	6.1-7.8	0-5	0.1-0.5
	57-60	4.0-16	---	7.4-8.4	15-40	0.0-0.5

Table 20.--Chemical Properties of the Soils--Continued

Map symbol and soil name	Depth	Cation-exchange capacity	Effective cation-exchange capacity	Soil reaction	Calcium carbon-ate	Organic matter
	In	meq/100 g	meq/100 g	pH	Pct	Pct
243B:						
St. Charles----------	0-8	14-22	---	5.1-7.8	0	1.0-3.0
	8-50	15-22	---	4.5-7.3	0	0.0-0.5
	50-60	9.0-19	---	5.1-7.3	0	0.0-0.5
244A:						
Hartsburg------------	0-17	27-40	---	6.1-7.8	0-5	4.5-6.0
	17-34	17-31	---	6.6-8.4	0-25	0.5-2.0
	34-60	9.0-23	---	7.4-8.4	15-40	0.1-0.5
272A:						
Edgington------------	0-20	18-34	---	5.1-6.5	0	4.5-6.0
	20-31	---	7.6-14	5.1-6.0	0	0.1-1.0
	31-55	17-31	---	5.1-6.0	0	0.5-1.5
	55-60	9.0-22	---	6.1-7.8	0-15	0.0-0.5
279B:						
Rozetta--------------	0-7	10-22	---	5.1-7.3	0	1.0-3.0
	7-11	7.0-17	---	4.5-7.3	0	0.1-1.0
	11-55	16-22	---	4.5-6.0	0	0.0-0.5
	55-60	12-17	---	5.6-7.8	0-15	0.0-0.5
279B2:						
Rozetta--------------	0-6	13-24	---	5.6-6.5	0	0.5-2.0
	6-53	16-29	---	5.6-7.3	0	0.3-0.8
	53-65	8.0-18	---	6.6-7.8	0-15	0.1-0.5
	65-80	4.0-16	---	7.4-8.4	15-40	0.1-0.3
322C2:						
Russell--------------	0-7	13-24	---	5.6-6.5	0	0.5-2.0
	7-27	---	13-17	4.5-5.5	0	0.1-0.5
	27-56	11-22	---	5.6-7.3	0-5	0.1-0.5
	56-72	4.0-16	---	7.4-8.4	15-40	0.1-0.3
322D3:						
Russell--------------	0-3	13-24	---	5.6-7.3	0	0.3-1.0
	3-29	13-18	---	4.5-6.5	0	0.1-0.5
	29-47	11-22	---	5.6-7.3	0-5	0.1-0.5
	47-60	4.0-16	---	6.6-8.4	0-40	0.1-0.3
330A:						
Peotone--------------	0-6	29-33	---	5.6-7.3	0	4.5-7.0
	6-28	28-33	---	5.6-7.8	0	2.0-4.0
	28-44	28-33	---	6.1-7.8	0	1.5-3.5
	44-60	20-31	---	6.6-8.4	0-15	0.1-1.0
533.						
Urban land						
618F:						
Senachwine-----------	0-11	8.0-19	---	5.6-7.3	0	1.0-2.5
	11-17	12-24	---	5.1-7.3	0	0.3-0.8
	17-32	14-18	---	5.1-7.3	0	0.1-0.5
	32-40	9.0-19	---	6.6-7.8	0-5	0.1-0.5
	40-60	4.0-13	---	7.4-8.4	15-40	0.1-0.3
618G:						
Senachwine-----------	0-5	8.0-19	---	5.6-7.3	0	1.0-2.5
	5-11	7.0-19	---	5.6-7.3	0	0.3-0.8
	11-30	---	9.1-15	5.1-7.3	0	0.1-0.5
	30-38	9.0-19	---	5.1-7.3	0-5	0.1-0.5
	38-60	4.0-13	---	7.4-8.4	15-40	0.0-0.5

Table 20.--Chemical Properties of the Soils--Continued

Map symbol and soil name	Depth	Cation-exchange capacity	Effective cation-exchange capacity	Soil reaction	Calcium carbon-ate	Organic matter
	In	meq/100 g	meq/100 g	pH	Pct	Pct
622C2:						
Wyanet---------------	0-8	10-22	---	5.6-7.3	0	1.5-3.5
	8-26	12-24	---	5.6-7.3	0	0.5-1.5
	26-34	9.0-19	---	7.4-8.4	0-5	0.1-0.5
	34-60	4.0-16	---	7.9-8.4	15-40	0.0-0.5
667B:						
Kaneville------------	0-7	11-28	---	5.6-6.5	0	1.5-3.5
	7-11	9.0-24	---	6.1-7.3	0	0.3-0.8
	11-46	16-29	---	5.6-7.3	0	0.1-0.5
	46-50	9.0-19	---	6.1-7.3	0-5	0.1-0.5
	50-60	4.0-13	---	6.1-7.8	0-15	0.0-0.3
726A:						
Elburn, sandy substratum----------	0-14	16-32	---	5.6-7.3	0	3.5-5.0
	14-39	17-31	---	5.6-7.3	0	0.5-1.5
	39-50	7.0-20	---	6.1-7.3	0	0.1-0.5
	50-80	1.5-6.2	---	6.6-7.8	0-15	0.0-0.2
737B:						
Tama, very deep to sand----------------	0-16	18-27	---	5.6-7.3	0	3.0-4.0
	16-70	15-23	---	5.6-7.3	0	0.0-1.0
	70-80	2.6-8.6	---	5.6-7.3	0	0.0-0.5
748A:						
Plano, sandy substratum----------	0-16	17-23	---	5.6-7.3	0	3.0-4.0
	16-48	17-31	---	5.6-7.3	0	0.5-1.5
	48-51	7.0-20	---	5.6-7.3	0	0.1-0.5
	51-80	1.5-6.2	---	5.6-7.8	0-15	0.0-0.2
748B:						
Plano, sandy substratum----------	0-16	17-23	---	5.6-7.3	0	3.0-4.0
	16-40	17-31	---	5.6-7.3	0	0.5-1.5
	40-51	7.0-20	---	5.6-7.3	0	0.1-0.5
	51-80	1.5-6.2	---	5.6-7.8	0-15	0.0-0.2
749B:						
Buckhart, till substratum----------	0-13	18-25	---	5.6-7.3	0	3.0-4.0
	13-59	15-23	---	5.6-7.8	0	0.2-1.0
	59-69	14-21	---	6.6-7.8	0-15	0.1-0.5
	69-80	4.0-16	---	7.4-8.4	15-40	0.1-0.5
802B:						
Orthents, loamy------	0-10	14-22	---	5.6-7.8	0-10	0.5-2.0
	10-60	11-17	---	5.6-7.8	0-15	0.0-1.0
802D:						
Orthents, loamy------	0-10	18-25	---	5.6-7.8	0-10	0.5-2.0
	10-60	11-19	---	5.6-7.8	0-15	0.0-0.5
865.						
Pits, gravel						

Table 20.--Chemical Properties of the Soils--Continued

Map symbol and soil name	Depth	Cation-exchange capacity	Effective cation-exchange capacity	Soil reaction	Calcium carbon-ate	Organic matter
	In	meq/100 g	meq/100 g	pH	Pct	Pct
964F:						
Miami----------------	0-6	7.0-27	---	6.1-7.3	0	1.0-2.5
	6-11	4.0-19	---	5.6-7.3	0	0.1-0.8
	11-28	11-22	---	5.6-7.3	0-5	0.1-0.5
	28-47	4.0-13	---	7.4-8.4	15-40	0.1-0.5
	47-60	4.0-13	---	7.4-8.4	15-40	0.0-0.5
Hennepin-------------	0-6	14-27	---	6.6-7.8	0-5	1.0-2.5
	6-19	9.0-19	---	7.4-8.4	0-15	0.1-0.5
	19-60	4.0-16	---	7.9-8.4	15-40	0.0-0.5
3073A:						
Ross-----------------	0-13	13-23	---	6.1-7.3	0	2.0-4.0
	13-43	12-26	---	6.1-7.3	0	1.0-3.0
	43-60	4.6-17	---	6.1-7.8	0-1	0.5-1.0
3107A:						
Sawmill--------------	0-10	23-36	---	6.1-7.8	0	4.5-7.0
	10-32	23-36	---	6.1-7.8	0	4.5-7.0
	32-58	18-34	---	6.1-7.8	0	1.5-3.5
	58-65	18-34	---	6.1-7.8	0-5	0.8-3.5
3451A:						
Lawson---------------	0-8	13-34	---	6.1-7.3	0	3.5-7.0
	8-35	11-28	---	6.1-7.3	0	3.0-5.0
	35-80	13-26	---	6.1-7.8	0-3	0.5-1.0
7134C:						
Camden---------------	0-7	11-29	---	5.1-7.3	0	1.0-2.5
	7-34	15-29	---	5.1-7.3	0	0.1-0.8
	34-43	9.0-20	---	5.1-7.3	0	0.0-0.5
	43-80	2.0-10	---	6.1-7.8	0-25	0.0-0.5
7148B:						
Proctor--------------	0-16	16-25	---	5.6-7.3	0	3.0-4.0
	16-34	16-23	---	5.6-6.5	0	0.2-1.0
	34-53	9.0-22	---	5.6-7.3	0	0.1-0.5
	53-60	3.0-7.0	---	6.1-7.3	0	0.0-0.5
7198A:						
Elburn---------------	0-16	16-32	---	6.1-7.3	0	3.5-5.0
	16-49	17-31	---	5.6-7.3	0	0.5-1.5
	49-58	6.0-13	---	6.6-7.8	0-5	0.1-0.5
	58-62	2.0-10	---	6.6-7.8	0-15	0.1-0.5
7199A:						
Plano----------------	0-14	17-26	---	6.1-7.3	0	3.0-4.0
	14-49	15-30	---	5.1-7.3	0	0.2-1.0
	49-60	9.0-20	---	5.6-7.8	0	0.1-0.5
	60-72	6.0-13	---	5.6-8.4	0-20	0.1-0.5
7199B:						
Plano----------------	0-9	14-28	---	6.1-7.3	0	3.0-4.0
	9-46	17-31	---	5.6-7.3	0	0.5-1.5
	46-53	9.0-19	---	6.6-7.8	0-5	0.1-0.5
	53-60	3.0-15	---	6.6-7.8	0-15	0.1-0.5
7242A:						
Kendall--------------	0-9	14-20	---	5.1-7.3	0	1.0-3.0
	9-14	11-16	---	5.1-7.3	0	0.1-1.0
	14-54	16-22	---	4.5-7.3	0	0.0-0.5
	54-60	6.0-16	---	5.6-8.4	0-15	0.0-0.5

Table 20.--Chemical Properties of the Soils--Continued

Map symbol and soil name	Depth	Cation-exchange capacity	Effective cation-exchange capacity	Soil reaction	Calcium carbon-ate	Organic matter
	In	meq/100 g	meq/100 g	pH	Pct	Pct
7243B:						
St. Charles----------	0-8	14-22	---	5.1-7.8	0	1.0-2.5
	8-50	15-22	---	4.5-7.3	0	0.0-0.5
	50-60	9.0-19	---	5.1-7.3	0	0.0-0.5
8074A:						
Radford--------------	0-21	14-30	---	5.6-6.5	0	3.5-5.0
	21-29	10-26	---	6.1-7.3	0	1.5-3.5
	29-60	23-36	---	6.1-7.3	0	4.5-7.0
8107A:						
Sawmill--------------	0-26	23-36	---	6.1-7.8	0	4.0-7.0
	26-53	18-34	---	6.1-7.8	0-5	2.0-7.0
	53-60	18-34	---	6.1-8.4	0-30	1.0-3.0
8451A:						
Lawson---------------	0-28	16-32	---	6.1-7.3	0	3.5-5.0
	28-60	10-25	---	6.1-7.3	0	0.5-1.5
8720A:						
Aetna----------------	0-8	10-26	---	6.1-7.3	0	1.0-2.5
	8-22	15-25	---	6.1-7.3	0	0.1-0.5
	22-41	27-40	---	6.6-7.8	0-5	4.5-6.0
	41-60	18-30	---	6.6-7.8	0-5	0.5-1.5

Table 21.--Water Features

(See text for definitions of terms used in this table. Estimates of the frequency of ponding and flooding apply to the whole year rather than to individual months. Absence of an entry indicates that the feature is not a concern or that data were not estimated)

Map symbol and soil name	Hydro-logic group	Ponding: Surface water depth	Ponding: Duration	Ponding: Frequency	Flooding: Duration	Flooding: Frequency	Months	Water table: Upper limit	Water table: Lower limit	Water table: Kind of water table
		Ft						Ft	Ft	
17A:										
Keomah----------------	C	---	---	None	---	None	Jan-May	0.5-2.0	>6.0	Apparent
							Jun-Dec	>6.0	>6.0	---
27D2:										
Miami-----------------	B	---	---	None	---	None	Jan	>6.0	>6.0	---
							Feb-Apr	2.0-3.5	2.1-3.6	Perched
							May-Dec	>6.0	>6.0	---
43A:										
Ipava-----------------	B	---	---	None	---	None	Jan-May	1.0-2.0	>6.0	Apparent
							Jun-Dec	>6.0	>6.0	---
45A:										
Denny-----------------	D	0.0-1.0	Brief	Frequent	---	None	Jan-May	0.0-1.0	>6.0	Apparent
							Jun-Dec	>6.0	>6.0	---
56B2:										
Dana------------------	B	---	---	None	---	None	Jan	>6.0	>6.0	---
							Feb-Apr	2.0-3.5	3.3-5.0	Perched
							May-Dec	>6.0	>6.0	---
67A:										
Harpster--------------	B/D	0.0-0.5	Brief	Frequent	---	None	Jan-May	0.0-1.0	>6.0	Apparent
							Jun-Dec	>6.0	>6.0	---
68A:										
Sable-----------------	B/D	0.0-0.5	Brief	Frequent	---	None	Jan-May	0.0-1.0	>6.0	Apparent
							Jun-Dec	>6.0	>6.0	---
86B:										
Osco------------------	B	---	---	None	---	None	Jan	>6.0	>6.0	---
							Feb-Apr	4.0-6.0	>6.0	Apparent
							May-Dec	>6.0	>6.0	---
134C2:										
Camden----------------	B	---	---	None	---	None	Jan-Dec	>6.0	>6.0	---
138A:										
Shiloh----------------	C/D	0.0-1.0	Brief	Frequent	---	None	Jan-Jun	0.0-1.0	>6.0	Apparent
							Jul-Dec	>6.0	>6.0	---
148B2:										
Proctor---------------	B	---	---	None	---	None	Jan-Dec	>6.0	>6.0	---
171B:										
Catlin----------------	B	---	---	None	---	None	Jan	>6.0	>6.0	---
							Feb-Apr	2.0-3.5	3.7-5.4	Perched
							May-Dec	>6.0	>6.0	---
171B2:										
Catlin----------------	B	---	---	None	---	None	Jan	>6.0	>6.0	---
							Feb-Apr	1.5-3.5	3.7-5.4	Perched
							May-Dec	>6.0	>6.0	---

Table 21.--Water Features--Continued

Map symbol and soil name	Hydro- logic group	Ponding: Surface water depth	Ponding: Duration	Ponding: Frequency	Flooding: Duration	Flooding: Frequency	Months	Water table: Upper limit	Water table: Lower limit	Water table: Kind of water table
		Ft						Ft	Ft	
171C2:										
Catlin----------------	B	---	---	None	---	None	Jan	>6.0	>6.0	---
							Feb-Apr	2.0-3.5	3.7-5.4	Perched
							May-Dec	>6.0	>6.0	---
198A:										
Elburn----------------	B	---	---	None	---	None	Jan-May	1.0-2.0	>6.0	Apparent
							Jun-Dec	>6.0	>6.0	---
199A:										
Plano-----------------	B	---	---	None	---	None	Jan-Dec	>6.0	>6.0	---
199B2:										
Plano-----------------	B	---	---	None	---	None	Jan-Dec	>6.0	>6.0	---
233B:										
Birkbeck--------------	B	---	---	None	---	None	Jan	>6.0	>6.0	---
							Feb-Apr	2.0-3.5	3.3-5.8	Perched
							May-Dec	>6.0	>6.0	---
233C2:										
Birkbeck--------------	B	---	---	None	---	None	Jan	>6.0	>6.0	---
							Feb-Apr	2.0-3.5	3.3-5.8	Perched
							May-Dec	>6.0	>6.0	---
243B:										
St. Charles-----------	B	---	---	None	---	None	Jan-Dec	>6.0	>6.0	---
244A:										
Hartsburg-------------	B/D	0.0-0.5	Brief	Frequent	---	None	Jan-May	0.0-1.0	>6.0	Apparent
							Jun-Dec	>6.0	>6.0	---
272A:										
Edgington-------------	C/D	0.0-0.5	Brief	Frequent	---	None	Jan-May	0.0-1.0	>6.0	Apparent
							Jun-Dec	>6.0	>6.0	---
279B:										
Rozetta---------------	B	---	---	None	---	None	Jan	>6.0	>6.0	---
							Feb-Apr	4.0-6.0	>6.0	Apparent
							May-Dec	>6.0	>6.0	---
279B2:										
Rozetta---------------	B	---	---	None	---	None	Jan	>6.0	>6.0	---
							Feb-Apr	2.0-3.5	5.0-6.7	Perched
							May-Dec	>6.0	>6.0	---
322C2:										
Russell---------------	B	---	---	None	---	None	Jan-Dec	>6.0	>6.0	---
322D3:										
Russell---------------	B	---	---	None	---	None	Jan-Dec	>6.0	>6.0	---
330A:										
Peotone---------------	C/D	0.0-1.0	Brief	Frequent	---	None	Jan-Jun	0.0-1.0	>6.0	Apparent
							Jul-Dec	>6.0	>6.0	---
533:										
Urban land------------	D	---	---	None	---	None	Jan-Dec	>6.0	>6.0	---
618F:										
Senachwine------------	B	---	---	None	---	None	Jan-Dec	>6.0	>6.0	---

Table 21.--Water Features--Continued

Map symbol and soil name	Hydro-logic group	Ponding: Surface water depth	Ponding: Duration	Ponding: Frequency	Flooding: Duration	Flooding: Frequency	Months	Water table: Upper limit	Water table: Lower limit	Water table: Kind of water table
		Ft						Ft	Ft	
618G:										
Senachwine	B	---	---	None	---	None	Jan-Dec	>6.0	>6.0	---
622C2:										
Wyanet	B	---	---	None	---	None	Jan-Dec	>6.0	>6.0	---
667B:										
Kaneville	B	---	---	None	---	None	Jan	>6.0	>6.0	---
							Feb-Apr	2.0-3.5	>6.0	Apparent
							May-Dec	>6.0	>6.0	---
726A:										
Elburn, sandy substratum	B	---	---	None	---	None	Jan-May	1.0-2.0	>6.0	Apparent
							Jun-Dec	>6.0	>6.0	---
737B:										
Tama, very deep to sand	B	---	---	None	---	None	Jan-Dec	>6.0	>6.0	---
748A:										
Plano, sandy substratum	B	---	---	None	---	None	Jan-Dec	>6.0	>6.0	---
748B:										
Plano, sandy substratum	B	---	---	None	---	None	Jan-Dec	>6.0	>6.0	---
749B:										
Buckhart, till substratum	B	---	---	None	---	None	Jan	>6.0	>6.0	---
							Feb-Apr	2.0-3.5	5.0-6.7	Perched
							May-Dec	>6.0	>6.0	---
802B:										
Orthents, loamy	C	---	---	None	---	None	Jan	>6.0	>6.0	---
							Feb-Apr	3.3-6.0	>6.0	Apparent
							May-Dec	>6.0	>6.0	---
802D:										
Orthents, loamy	C	---	---	None	---	None	Jan	>6.0	>6.0	---
							Feb-Apr	3.3-6.0	>6.0	Apparent
							May-Dec	>6.0	>6.0	---
865.										
Pits, gravel										
964F:										
Miami	B	---	---	None	---	None	Jan	>6.0	>6.0	---
							Feb-Apr	2.0-3.5	2.1-3.6	Perched
							May-Dec	>6.0	>6.0	---
Hennepin	B	---	---	None	---	None	Jan-Dec	>6.0	>6.0	---
3073A:										
Ross	B	---	---	None	Brief	Frequent	Jan	>6.0	>6.0	---
							Feb-Apr	4.0-6.6	>6.0	Apparent
							May-Dec	>6.0	>6.0	---

Table 21.--Water Features--Continued

Map symbol and soil name	Hydro-logic group	Ponding: Surface water depth	Ponding: Duration	Ponding: Frequency	Flooding: Duration	Flooding: Frequency	Months	Water table: Upper limit	Water table: Lower limit	Water table: Kind of water table
		Ft						Ft	Ft	
3107A:										
Sawmill	B/D	0.0-0.5	Brief	Frequent	Brief	Frequent	Jan-May	0.0-1.0	>6.0	Apparent
							Jun-Dec	>6.0	>6.0	---
3451A:										
Lawson	B	---	---	None	Brief	Frequent	Jan-May	1.0-3.0	>6.0	Apparent
							Jun-Dec	>6.0	>6.0	---
7134C:										
Camden	B	---	---	None	Very brief	Rare	Jan-Dec	>6.0	>6.0	---
7148B:										
Proctor	B	---	---	None	Very brief	Rare	Jan-Dec	>6.0	>6.0	---
7198A:										
Elburn	B	---	---	None	Very brief	Rare	Jan-May	1.0-2.0	>6.0	Apparent
							Jun-Dec	>6.0	>6.0	---
7199A:										
Plano	B	---	---	None	Very brief	Rare	Jan-Dec	>6.0	>6.0	---
7199B:										
Plano	B	---	---	None	Very brief	Rare	Jan-Dec	>6.0	>6.0	---
7242A:										
Kendall	B	---	---	None	Very brief	Rare	Jan-May	0.5-2.0	>6.0	Apparent
							Jun-Dec	>6.0	>6.0	---
7243B:										
St. Charles	B	---	---	None	Very brief	Rare	Jan-Dec	>6.0	>6.0	---
8074A:										
Radford	B	---	---	None	Brief	Occasional	Jan-May	1.0-2.0	>6.0	Apparent
							Jun-Dec	>6.0	>6.0	---
8107A:										
Sawmill	B/D	0.0-0.5	Brief	Frequent	Brief	Occasional	Jan-May	0.0-1.0	>6.0	Apparent
							Jun-Dec	>6.0	>6.0	---
8451A:										
Lawson	B	---	---	None	Brief	Occasional	Jan-May	1.0-2.0	>6.0	Apparent
							Jun-Dec	>6.0	>6.0	---
8720A:										
Aetna	B	---	---	None	Brief	Occasional	Jan-May	0.5-2.0	>6.0	Apparent
							Jun-Dec	>6.0	>6.0	---

Table 22.--Soil Features

(See text for definitions of terms used in this table. Absence of an entry indicates that the feature is not a concern or that data were not estimated)

Map symbol and soil name	Restrictive layer			Potential for frost action	Risk of corrosion	
	Kind	Depth to top	Hardness		Uncoated steel	Concrete
		In				
17A:						
Keomah	---	---	---	High	High	Moderate
27D2:						
Miami	Dense material	24-40	Noncemented	Moderate	High	Moderate
43A:						
Ipava	---	---	---	High	High	Moderate
45A:						
Denny	Abrupt textural change	10-24	---	High	High	Moderate
56B2:						
Dana	---	---	---	High	High	Moderate
67A:						
Harpster	---	---	---	High	High	Low
68A:						
Sable	---	---	---	High	High	Low
86B:						
Osco	---	---	---	High	Moderate	Moderate
134C2:						
Camden	---	---	---	High	Moderate	Moderate
138A:						
Shiloh	---	---	---	High	High	Low
148B2:						
Proctor	---	---	---	High	Moderate	Moderate
171B:						
Catlin	---	---	---	High	High	Moderate
171B2:						
Catlin	---	---	---	High	High	Low
171C2:						
Catlin	---	---	---	High	High	Moderate
198A:						
Elburn	---	---	---	High	High	Moderate
199A:						
Plano	---	---	---	High	Moderate	Moderate
199B2:						
Plano	---	---	---	High	Moderate	Moderate
233B:						
Birkbeck	---	---	---	High	High	High
233C2:						
Birkbeck	---	---	---	High	High	High

Table 22.--Soil Features--Continued

Map symbol and soil name	Restrictive layer			Potential for frost action	Risk of corrosion	
	Kind	Depth to top	Hardness		Uncoated steel	Concrete
		In				
243B:						
St. Charles-------	---	---	---	High	Moderate	High
244A:						
Hartsburg---------	---	---	---	High	High	Low
272A:						
Edgington---------	---	---	---	High	High	Moderate
279B:						
Rozetta-----------	---	---	---	High	Moderate	High
279B2:						
Rozetta-----------	---	---	---	High	Moderate	Moderate
322C2:						
Russell-----------	Dense material	40-60	Noncemented	High	Moderate	Moderate
322D3:						
Russell-----------	Dense material	40-60	Noncemented	High	Moderate	Moderate
330A:						
Peotone-----------	---	---	---	High	High	Low
533.						
Urban land						
618F:						
Senachwine--------	---	---	---	Moderate	Moderate	Moderate
618G:						
Senachwine--------	---	---	---	Moderate	Moderate	Moderate
622C2:						
Wyanet------------	---	---	---	Moderate	Moderate	Moderate
667B:						
Kaneville---------	---	---	---	High	High	Moderate
726A:						
Elburn, sandy substratum-------	Strongly contrasting textural stratification	40-60	---	High	High	Moderate
737B:						
Tama, very deep to sand----------	Strongly contrasting textural stratification	60-80	---	High	Moderate	Moderate
748A:						
Plano, sandy substratum-------	Strongly contrasting textural stratification	40-60	---	High	Moderate	Moderate

Table 22.--Soil Features--Continued

Map symbol and soil name	Restrictive layer			Potential for frost action	Risk of corrosion	
	Kind	Depth to top	Hardness		Uncoated steel	Concrete
		In				
748B:						
Plano, sandy substratum	Strongly contrasting textural stratification	40-60	---	High	Moderate	Moderate
749B:						
Buckhart, till substratum	---	---	---	High	High	Moderate
802B:						
Orthents, loamy	---	---	---	Moderate	High	Moderate
802D:						
Orthents, loamy	---	---	---	Moderate	High	Moderate
865.						
Pits, gravel						
964F:						
Miami	Dense material	24-40	Noncemented	Moderate	High	Moderate
Hennepin	---	---	---	Moderate	Low	Low
3073A:						
Ross	---	---	---	Moderate	Low	Low
3107A:						
Sawmill	---	---	---	High	High	Low
3451A:						
Lawson	---	---	---	High	High	Low
7134C:						
Camden	---	---	---	High	Moderate	Moderate
7148B:						
Proctor	---	---	---	High	Moderate	Moderate
7198A:						
Elburn	---	---	---	High	High	Moderate
7199A:						
Plano	---	---	---	High	Moderate	Moderate
7199B:						
Plano	---	---	---	High	Moderate	Moderate
7242A:						
Kendall	---	---	---	High	High	High
7243B:						
St. Charles	---	---	---	High	Moderate	High
8074A:						
Radford	---	---	---	High	High	Low
8107A:						
Sawmill	---	---	---	High	High	Low

Table 22.--Soil Features--Continued

Map symbol and soil name	Restrictive layer			Potential for frost action	Risk of corrosion	
	Kind	Depth to top	Hardness		Uncoated steel	Concrete
		In				
8451A:						
Lawson------------	---	---	---	High	High	Low
8720A:						
Aetna-------------	---	---	---	High	High	Low

Table 23.--Engineering Index Test Data

(MAX means maximum dry density; OPT, optimum moisture; LL, liquid limit; and PI, plasticity index)

Soil name	Sample number	Horizon	Depth	Moisture density MAX	Moisture density OPT	Percentage passing sieve* No. 4	No. 10	No. 40	No. 200	LL	PI	Classification AASHTO	Classification Unified
			In	lb/ft3	Pct					Pct			
Catlin	84IL039011-1	Ap	0-8	101	20	100	100	99	98	37	14	A-6(15)	CL
	84IL039011-3	Bt2	14-21	92	24	100	100	100	99	44	20	A-7-6(22)	CL
	84IL039011-7	BC	41-46	115	14	100	100	87	68	31	14	A-6(7)	CL
Ipava	83IL039015-1	Ap	0-7	104	19	99	99	97	93	33	11	A-6(11)	CL
	83IL039015-4, 83IL039015-5	Bt,Btg1	18-32	94	21	100	100	100	99	52	27	A-7-6(31)	CH
	83IL039015-7	Cg	55-60	109	17	100	100	99	98	30	8	A-4(8)	CL
Miami	83IL039008-4	Bt2	11-21	113	14	98	96	89	65	30	14	A-6(6)	CL
	83IL039008-8	C	49-60	117	14	97	95	89	65	27	13	A-6(5)	CL
Russell	83IL039018-4	Bt2	16-25	102	21	100	100	100	98	42	21	A-7-6(22)	CL
	83IL039018-5	2Bt3	25-36	109	17	100	100	98	83	35	16	A-6(12)	CL
	83IL039018-7	C	44-60	118	14	97	95	90	64	30	14	A-6(6)	CL

* Analysis according to AASHTO designation T88. Results by this procedure frequently differ somewhat from results obtained by the soil survey procedure of the Natural Resources Conservation Service (NRCS).

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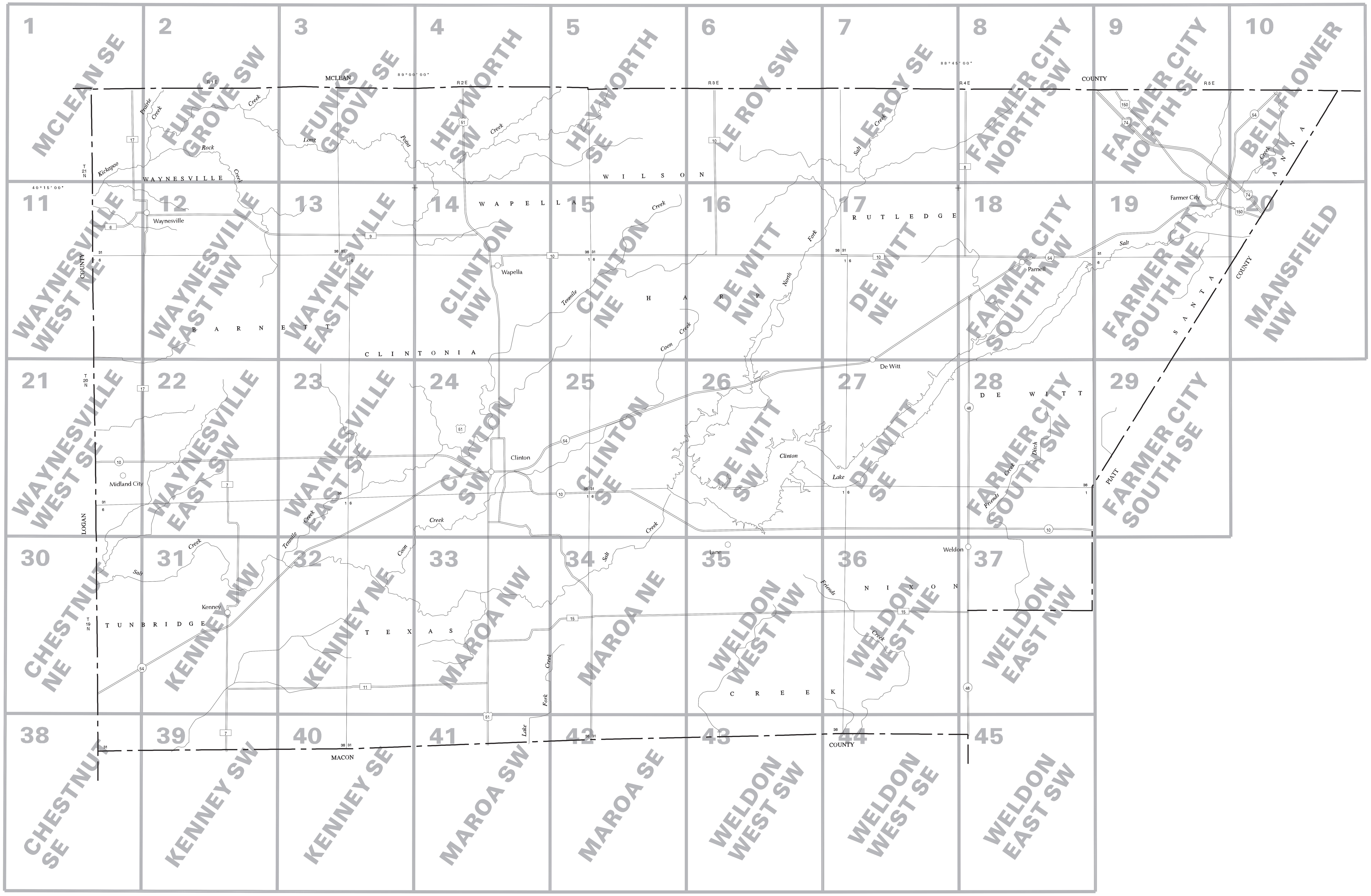

N

SECTIONALIZED TOWNSHIP

6	5	4	3	2	1
7	8	9	10	11	12
18	17	16	15	14	13
19	20	21	22	23	24
30	29	28	27	26	25
31	32	33	34	35	36

INDEX TO MAP SHEETS
DE WITT COUNTY, ILLINOIS

1 0 1 2 3
MILES

1 0 1 2 3 4 5 6
KILOMETERS

SCALE = 1:85000

SOIL LEGEND

Map unit symbols consist of a combination of numbers and letters. The initial numbers represent the kind of soil or miscellaneous area. An uppercase letter following these numbers indicates the class of slope. A final number of 2 following the slope class letter indicates that the soil is moderately eroded, and a final number of 3 indicates that the soil is severely eroded. Symbols that do not have a final number of 2 or 3 following a slope class letter indicate map units that are not eroded or are only slightly eroded. Symbols for miscellaneous areas do not have a slope class letter.

SYMBOL	NAME
17A	Keomah silt loam, 0 to 2 percent slopes
27D2	Miami silt loam, 10 to 18 percent slopes, eroded
43A	Ipava silt loam, 0 to 2 percent slopes
45A	Denny silt loam, 0 to 2 percent slopes
56B2	Dana silt loam, 2 to 5 percent slopes, eroded
67A	Harpster silty clay loam, 0 to 2 percent slopes
68A	Sable silty clay loam, 0 to 2 percent slopes
86B	Osco silt loam, 2 to 5 percent slopes
134C2	Camden silt loam, 5 to 10 percent slopes, eroded
138A	Shiloh silty clay loam, 0 to 2 percent slopes
148B2	Proctor silt loam, 2 to 5 percent slopes, eroded
171B	Catlin silt loam, 2 to 5 percent slopes
171B2	Catlin silt loam, 2 to 5 percent slopes, eroded
171C2	Catlin silt loam, 5 to 10 percent slopes, eroded
198A	Elburn silt loam, 0 to 2 percent slopes
199A	Plano silt loam, 0 to 2 percent slopes
199B2	Plano silt loam, 2 to 5 percent slopes, eroded
233B	Birkbeck silt loam, 2 to 5 percent slopes
233C2	Birkbeck silt loam, 5 to 10 percent slopes, eroded
243B	St. Charles silt loam, 2 to 5 percent slopes
244A	Hartsburg silty clay loam, 0 to 2 percent slopes
272A	Edgington silt loam, 0 to 2 percent slopes
279B	Rozetta silt loam, 2 to 5 percent slopes
279B2	Rozetta silt loam, 2 to 5 percent slopes, eroded
322C2	Russell silt loam, 5 to 10 percent slopes, eroded
322D3	Russell silty clay loam, 10 to 18 percent slopes, severely eroded
330A	Peotone silty clay loam, 0 to 2 percent slopes
533	Urban land
618F	Senachwine silt loam, 18 to 35 percent slopes
618G	Senachwine silt loam, 35 to 60 percent slopes
622C2	Wyanet silt loam, 5 to 10 percent slopes, eroded
667B	Kaneville silt loam, 2 to 5 percent slopes
726A	Elburn silt loam, sandy substratum, 0 to 2 percent slopes
737B	Tama silt loam, very deep to sand, 2 to 5 percent slopes
748A	Plano silt loam, sandy substratum, 0 to 2 percent slopes
748B	Plano silt loam, sandy substratum, 2 to 5 percent slopes
749B	Buckhart silt loam, till substratum, 2 to 5 percent slopes
802B	Orthents, loamy, undulating
802D	Orthents, loamy, 2 to 20 percent slopes
865	Pits, gravel
964F	Miami and Hennepin soils, 18 to 35 percent slopes
3073A	Ross silt loam, 0 to 2 percent slopes, frequently flooded
3107A	Sawmill silty clay loam, 0 to 2 percent slopes, frequently flooded
3451A	Lawson silt loam, 0 to 2 percent slopes, frequently flooded
7134C	Camden silt loam, 5 to 10 percent slopes, rarely flooded
7148B	Proctor silt loam, 2 to 5 percent slopes, rarely flooded
7198A	Elburn silt loam, 0 to 2 percent slopes, rarely flooded
7199A	Plano silt loam, 0 to 2 percent slopes, rarely flooded
7199B	Plano silt loam, 2 to 5 percent slopes, rarely flooded
7242A	Kendall silt loam, 0 to 2 percent slopes, rarely flooded
7243B	St. Charles silt loam, 2 to 5 percent slopes, rarely flooded
8074A	Radford silt loam, 0 to 2 percent slopes, occasionally flooded
8107A	Sawmill silty clay loam, 0 to 2 percent slopes, occasionally flooded
8451A	Lawson silt loam, 0 to 2 percent slopes, occasionally flooded
8720A	Aetna silt loam, 0 to 2 percent slopes, occasionally flooded
M-W	Miscellaneous water
W	Water

CONVENTIONAL AND SPECIAL SYMBOLS LEGEND

CULTURAL FEATURES

BOUNDARIES
- National, state, or province
- County or parish
- Minor civil division
- Reservation (national forest or park, state forest or park)
- Land grant
- Limit of soil survey (label) and/or denied access area
- Field sheet matchline & neatline
- Previously Published Survey

OTHER BOUNDARY (label)
- Airport, airfield
- Cemetery
- City/county park

STATE COORDINATE TICK
1 890 000 FEET

LAND DIVISION CORNER (section and land grants)

GEOGRAPHIC COORDINATE TICK

TRANSPORTATION
- Divided roads
- Other roads
- Trail

ROAD EMBLEM & DESIGNATIONS
- Interstate — 173, 79 345
- Federal — 287, 410 224
- State — 52, 52 347
- County, farm or ranch — 1283

RAILROAD

POWER TRANSMISSION LINE

PIPELINE

FENCE

LEVEES
- Without road
- With road
- With railroad
- Single side slope (showing actual feature location)

DAMS
- Medium or Small — W

LANDFORM FEATURES
- Prominent hill or peak
- Soil Sample Site

MISCELLANEOUS CULTURAL FEATURES
- Farmstead, house (omit in urban areas)
- Church
- School
- Other Religion (label) — Mt Carmel
- Located object (label) — Ranger Station
- Tank (label) — Petroleum
- Lookout Tower
- Oil and/or Natural Gas Wells
- Windmill
- Lighthouse

HYDROGRAPHIC FEATURES

STREAMS
- Perennial, double line
- Perennial, single line — Label only
- Intermittent — Label only
- Drainage end — Label only

DRAINAGE AND IRRIGATION
- Double-line canal (label) — CANAL
- Perennial drainage and/or irrigation ditch — Label only
- Intermittent drainage and/ or irrigation ditch — Label only

SMALL LAKES, PONDS AND RESERVOIRS
- Perennial water
- Miscellaneous water
- Flood pool line — FLOOD POOL LINE

MISCELLANEOUS WATER FEATURES
- Spring
- Well, artesian
- Well, irrigation

SPECIAL SYMBOLS FOR SOIL SURVEY AND SSURGO

SOIL DELINEATIONS AND SYMBOLS — 17A 68A

LANDFORM FEATURES

ESCARPMENTS
- Bedrock
- Other than bedrock
- Short steep slope
- Gully
- Depression, closed
- Sinkhole

EXCAVATIONS

PITS
- Borrow pits
- Gravel pit
- Mine or quarry
- Landfill

MISCELLANEOUS SURFACE FEATURES
- Blowout
- Clay spot
- Gravelly spot
- Lava flow
- Marsh or swamp
- Rock outcrop (includes sandstone and shale)
- Saline spot
- Sandy spot
- Severely eroded spot
- Slide or slip
- Sodic spot
- Spoil area
- Stony spot
- Very stony spot
- Wet spot

AD HOC FEATURES
- Calcareous spot

UNITED STATES
DEPARTMENT OF AGRICULTURE
NATURAL RESOURCES CONSERVATION SERVICE

DE WITT COUNTY, ILLINOIS
MCLEAN SE QUADRANGLE
SHEET NUMBER 1 OF 45

89°11'15" 89°07'30"
40°18'45" 40°18'45"

40°15'00" 40°15'00"
89°11'15" 89°07'30"
R. 1 W. | R. 1 E.

This soil survey was compiled by the U.S. Department of Agriculture, Natural Resources Conservation Service and cooperating agencies.
Base maps are orthophotographs prepared by the U.S. Department of Interior, Geological Survey, from 1998 - 1999 aerial photography.

North American Datum of 1983 (NAD83). GRS-80 Spheroid
1000-meter ticks: Universal Transverse Mercator, zone 16.
Coordinate grid ticks and land division data, if shown, are approximately positioned. Digital data are available for this quadrangle.

NORTH

QUARTER QUADRANGLE LOCATION

SCALE 1:12000

0.5 0 0.5
MILES

500 0 500 1000 1500 2000 2500 3000 3500
FEET

0.5 0 0.5
KILOMETERS

2 FUNKS GROVE SW
11 WAYNESVILLE WEST NE
12 WAYNESVILLE EAST NW

INDEX TO ADJOINING 3.75 MAPS

MCLEAN SE, ILLINOIS
3.75 MINUTE SERIES
SHEET NUMBER 1 OF 45

Soil map delineations extending beyond the dashed white quadrangle neatline are for reference only and are included on adjacent map sheets.

UNITED STATES
DEPARTMENT OF AGRICULTURE
NATURAL RESOURCES CONSERVATION SERVICE

DE WITT COUNTY, ILLINOIS
FUNKS GROVE SW QUADRANGLE
SHEET NUMBER 2 OF 45

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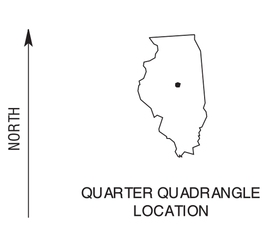

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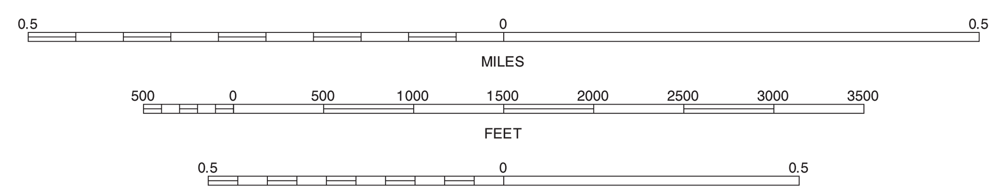

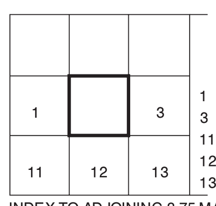

1 MCLEAN SE
3 FUNKS GROVE SE
11 WAYNESVILLE WEST NE
12 WAYNESVILLE EAST NW
13 WAYNESVILLE EAST NE

INDEX TO ADJOINING 3.75 MAPS

FUNKS GROVE SW, ILLINOIS
3.75 MINUTE SERIES
SHEET NUMBER 2 OF 45

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UNITED STATES
DEPARTMENT OF AGRICULTURE
NATURAL RESOURCES CONSERVATION SERVICE

DE WITT COUNTY, ILLINOIS
FUNKS GROVE SE QUADRANGLE
SHEET NUMBER 3 OF 45

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NORTH

QUARTER QUADRANGLE LOCATION

SCALE 1:12000

MILES

FEET

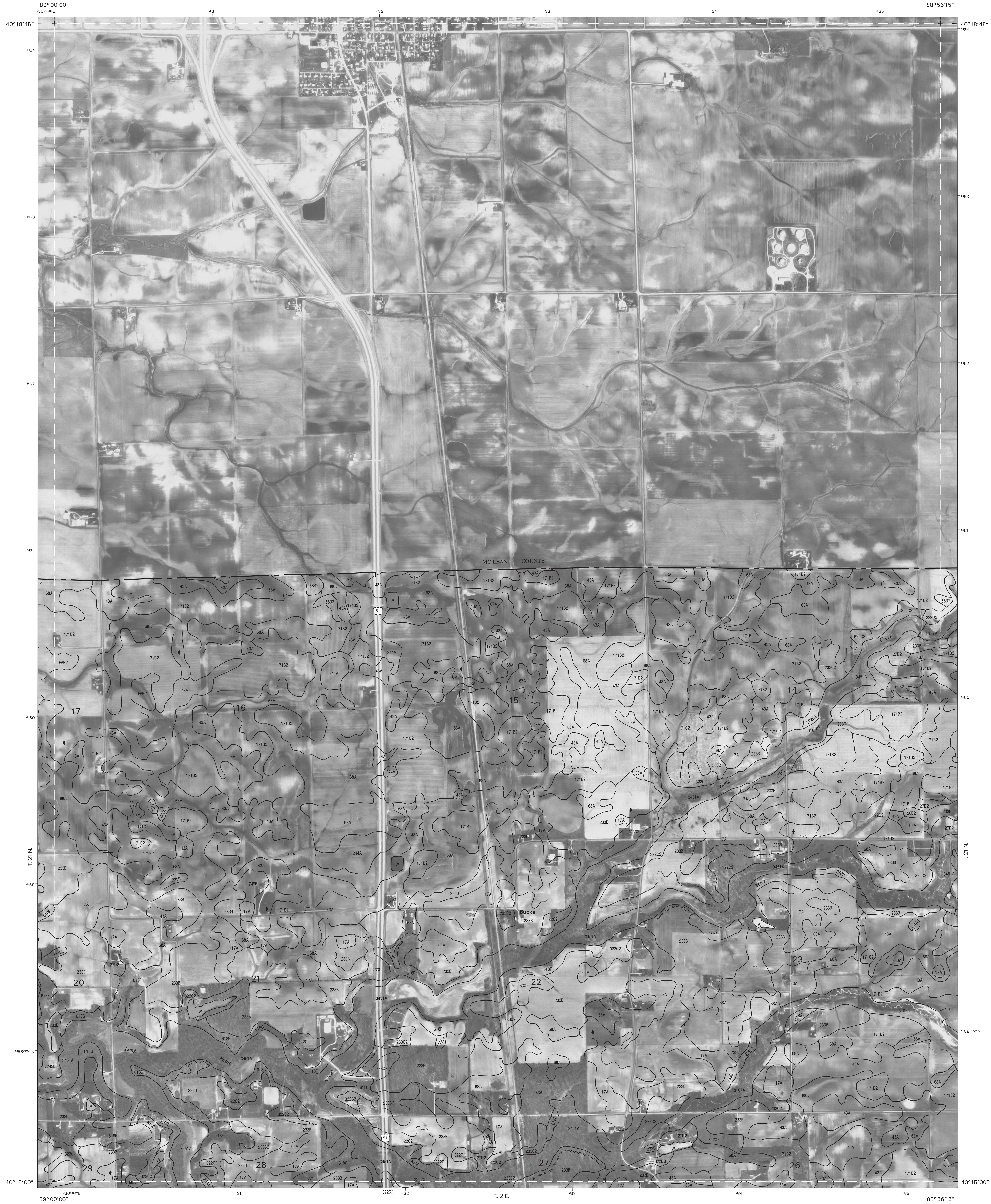
KILOMETERS

2 FUNKS GROVE SW
4 HEYWORTH SW
12 WAYNESVILLE EAST NW
13 WAYNESVILLE EAST NE
14 CLINTON NW

INDEX TO ADJOINING 3.75 MAPS

FUNKS GROVE SE, ILLINOIS
3.75 MINUTE SERIES
SHEET NUMBER 3 OF 45

Soil map delineations extending beyond the dashed white quadrangle neatline are for reference only and are included on adjacent map sheets.



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1000-meter ticks: Universal Transverse Mercator, zone 16.
Coordinate grid ticks and land division data, if shown, are approximately positioned. Digital data are available for this quadrangle.

NORTH

QUARTER QUADRANGLE LOCATION

SCALE 1:12000

0.5 0 0.5
MILES

500 0 500 1000 1500 2000 2500 3000 3500
FEET

0.5 0 0.5
KILOMETERS

3		5
13	14	15

3 FUNKS GROVE SE
5 HEYWORTH SE
13 WAYNESVILLE EAST NE
14 CLINTON NW
15 CLINTON NE

INDEX TO ADJOINING 3.75 MAPS

HEYWORTH SW, ILLINOIS

3.75 MINUTE SERIES
SHEET NUMBER 4 OF 45

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UNITED STATES
DEPARTMENT OF AGRICULTURE
NATURAL RESOURCES CONSERVATION SERVICE

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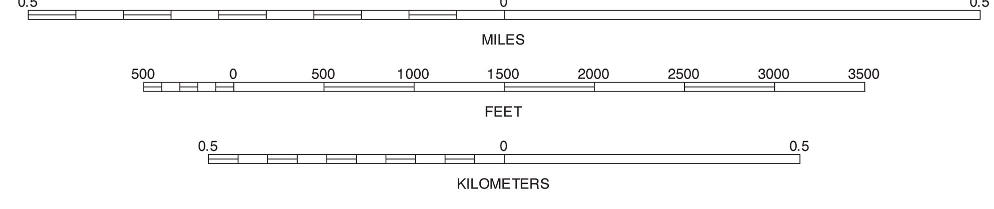
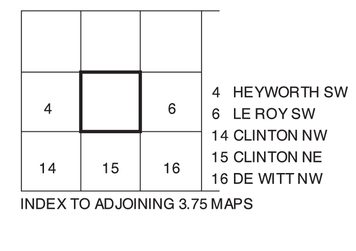
North American Datum of 1983 (NAD83). GRS-80 Spheroid
1000-meter ticks: Universal Transverse Mercator, zone 16.
Coordinate grid ticks and land division data, if shown, are approximately positioned. Digital data are available for this quadrangle.

SCALE 1:12000





HEYWORTH SE, ILLINOIS
3.75 MINUTE SERIES
SHEET NUMBER 5 OF 45

Soil map delineations extending beyond the dashed white quadrangle neatline are for reference only and are included on adjacent map sheets.

UNITED STATES
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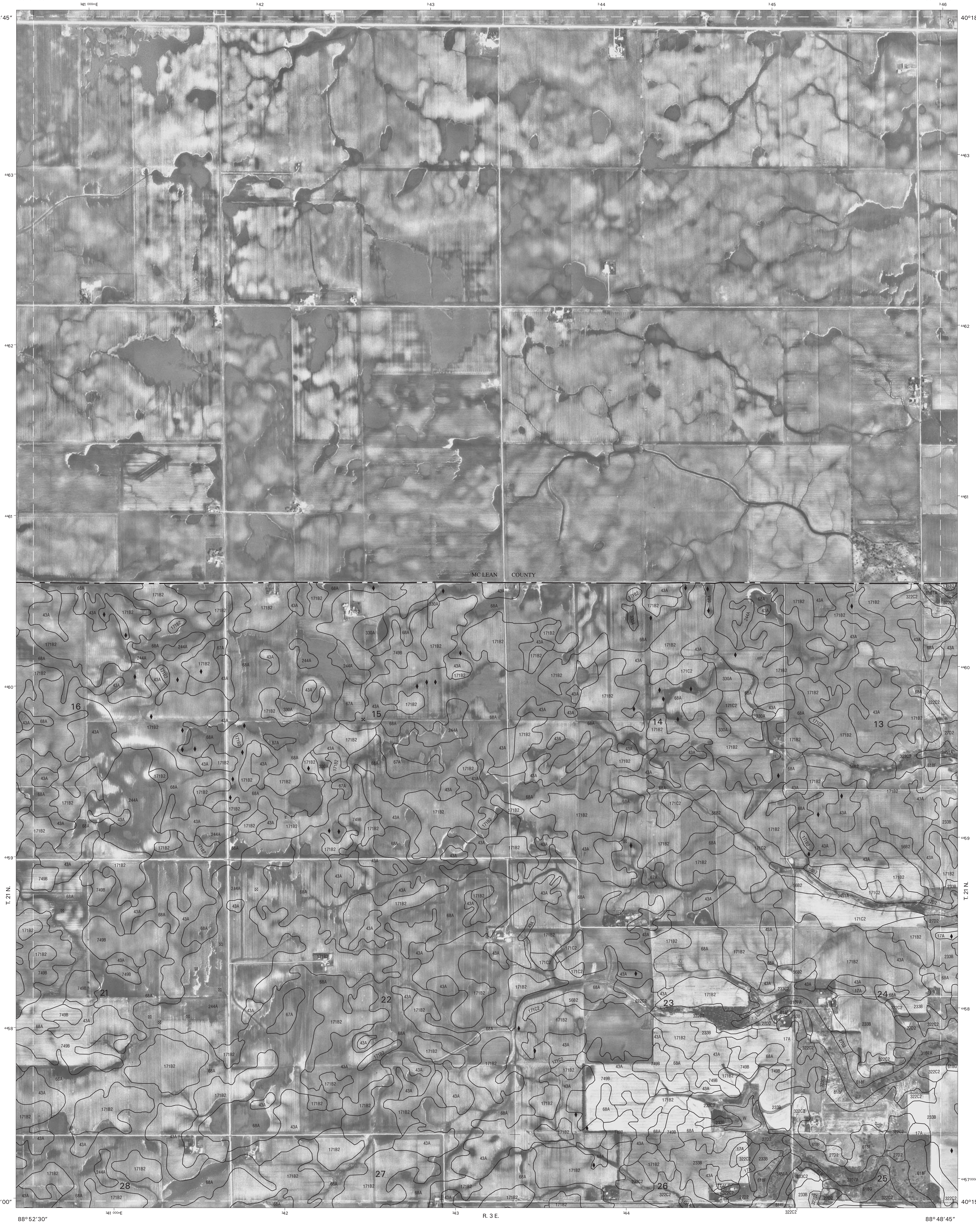
NATURAL RESOURCES CONSERVATION SERVICE

DE WITT COUNTY, ILLINOIS
LE ROY SW QUADRANGLE
SHEET NUMBER 6 OF 45



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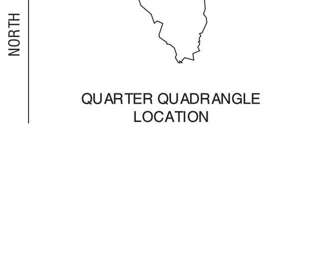
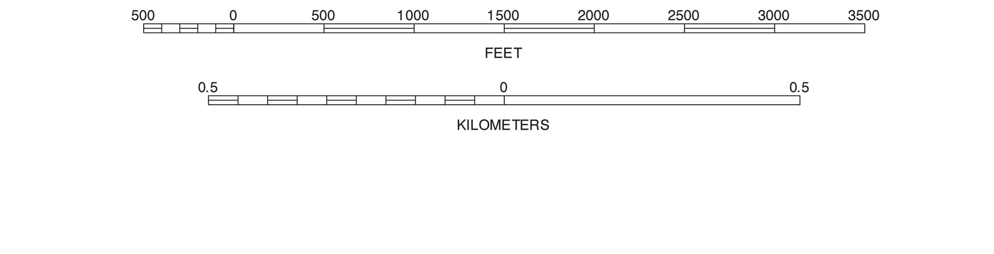
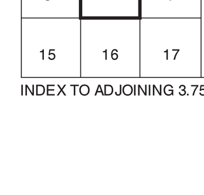
North American Datum of 1983 (NAD83). GRS-80 Spheroid 1000-meter ticks: Universal Transverse Mercator, zone 16. Coordinate grid ticks and land division data, if shown, are approximately positioned. Digital data are available for this quadrangle.







5 HEYWORTH SE
7 LE ROY SE
15 CLINTON NE
16 DE WITT NW
17 DE WITT NE

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LE ROY SW, ILLINOIS

3.75 MINUTE SERIES
SHEET NUMBER 6 OF 45

Soil map delineations extending beyond the dashed white quadrangle neatline are for reference only and are included on adjacent map sheets.

UNITED STATES
DEPARTMENT OF AGRICULTURE
NATURAL RESOURCES CONSERVATION SERVICE

DE WITT COUNTY, ILLINOIS
LE ROY SE QUADRANGLE
SHEET NUMBER 7 OF 45

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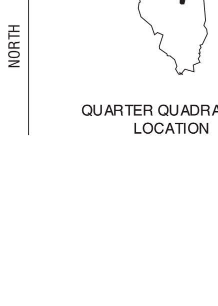
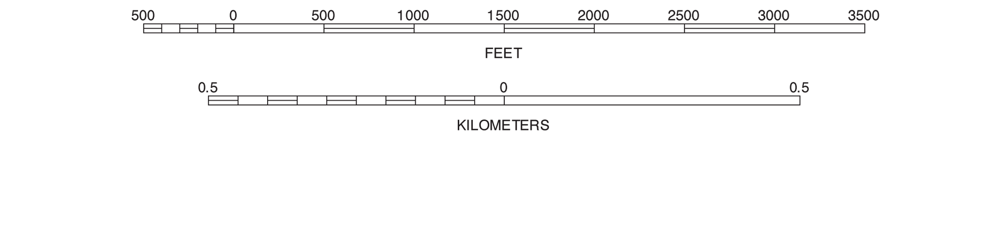
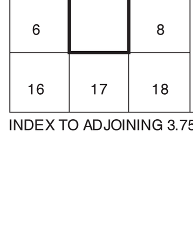


QUARTER QUADRANGLE LOCATION

SCALE 1:12000





6 LE ROY SW
8 FARMER CITY NORTH SW
16 DE WITT NW
17 DE WITT NE
18 FARMER CITY SOUTH NW

INDEX TO ADJOINING 3.75 MAPS

LE ROY SE, ILLINOIS
3.75 MINUTE SERIES
SHEET NUMBER 7 OF 45

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UNITED STATES
DEPARTMENT OF AGRICULTURE
NATURAL RESOURCES CONSERVATION SERVICE

DE WITT COUNTY, ILLINOIS
FARMER CITY NORTH SW QUADRANGLE
SHEET NUMBER 8 OF 45

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North American Datum of 1983 (NAD83). GRS-80 Spheroid 1000-meter ticks: Universal Transverse Mercator, zone 16. Coordinate grid ticks and land division data, if shown, are approximately positioned. Digital data are available for this quadrangle.

NORTH

QUARTER QUADRANGLE LOCATION

SCALE 1:12000

MILES

FEET

KILOMETERS

7		9
17	18	19

7 LE ROY SE
9 FARMER CITY NORTH SE
17 DE WITT NE
18 FARMER CITY SOUTH NW
19 FARMER CITY SOUTH NE

INDEX TO ADJOINING 3.75 MAPS

FARMER CITY NORTH SW, ILLINOIS
3.75 MINUTE SERIES
SHEET NUMBER 8 OF 45

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UNITED STATES
DEPARTMENT OF AGRICULTURE
NATURAL RESOURCES CONSERVATION SERVICE

DE WITT COUNTY, ILLINOIS
FARMER CITY NORTH SE QUADRANGLE
SHEET NUMBER 9 OF 45

88° 41′15″ 88° 37′30″
40°18′45″

40°15′00″
88° 41′15″ 88° 37′30″

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NORTH

QUARTER QUADRANGLE LOCATION

SCALE 1:12000

0.5 0 0.5 MILES

500 0 500 1000 1500 2000 2500 3000 3500 FEET

0.5 0 0.5 KILOMETERS

8		10
18	19	20

8 FARMER CITY NORTH SW
10 BELLFLOWER SW
18 FARMER CITY SOUTH NW
19 FARMER CITY SOUTH NE
20 MANSFIELD NW

INDEX TO ADJOINING 3.75 MAPS

FARMER CITY NORTH SE, ILLINOIS

3.75 MINUTE SERIES
SHEET NUMBER 9 OF 45

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UNITED STATES
DEPARTMENT OF AGRICULTURE
NATURAL RESOURCES CONSERVATION SERVICE

DE WITT COUNTY, ILLINOIS
BELLFLOWER SW QUADRANGLE
SHEET NUMBER 10 OF 45

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North American Datum of 1983 (NAD83). GRS-80 Spheroid
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NORTH

QUARTER QUADRANGLE LOCATION

SCALE 1:12000

MILES

FEET

KILOMETERS

9 FARMER CITY NORTH SE
19 FARMER CITY SOUTH NE
20 MANSFIELD NW

INDEX TO ADJOINING 3.75 MAPS

BELLFLOWER SW, ILLINOIS
3.75 MINUTE SERIES
SHEET NUMBER 10 OF 45

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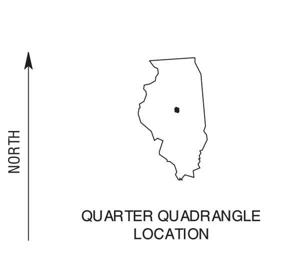


QUARTER QUADRANGLE LOCATION

SCALE 1:12000

MILES

FEET

KILOMETERS

	1	2
		12
	21	22

1 MCLEAN SE
2 FUNKS GROVE SW
12 WAYNESVILLE EAST NW
21 WAYNESVILLE WEST SE
22 WAYNESVILLE EAST SW

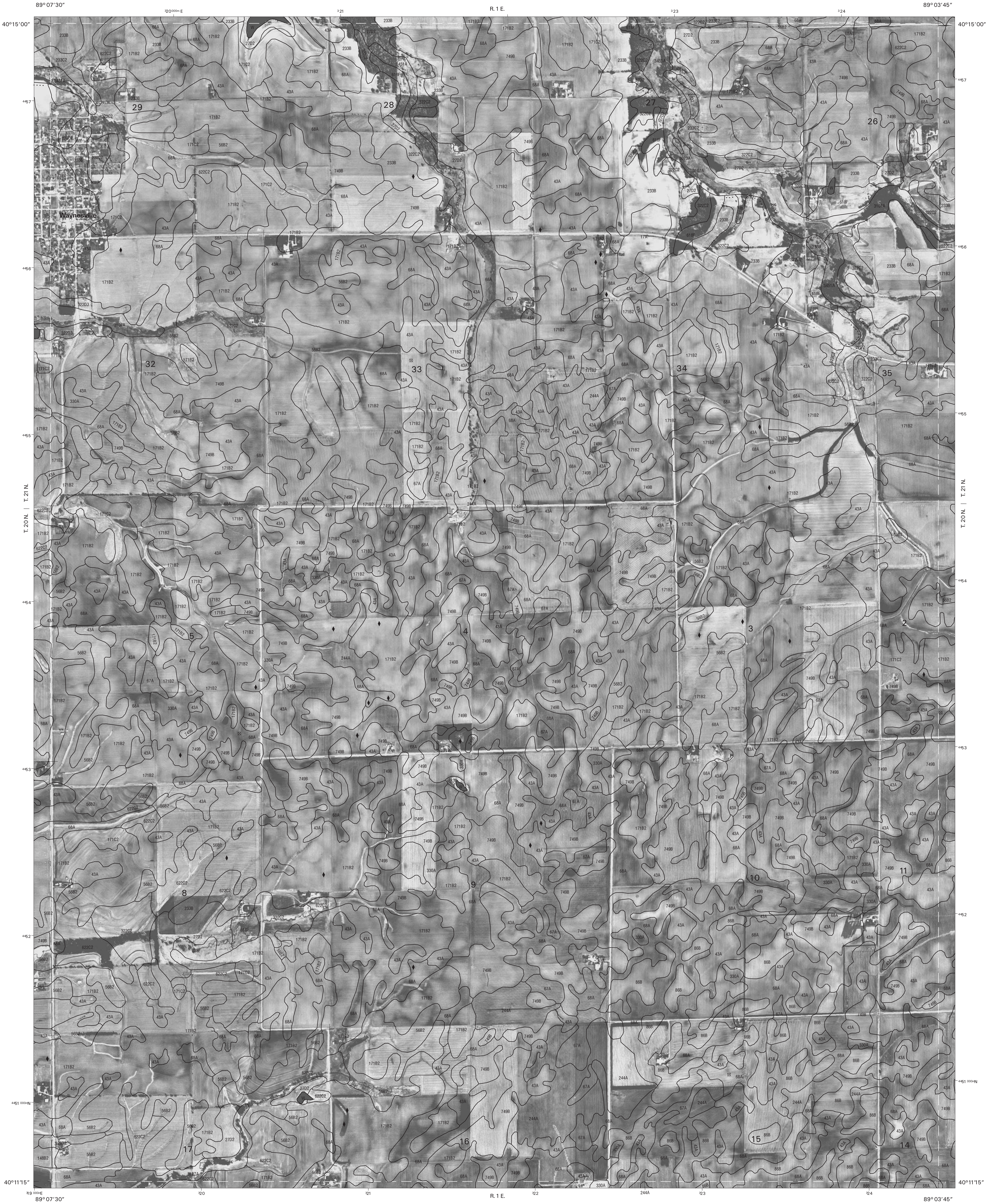
INDEX TO ADJOINING 3.75 MAPS

WAYNESVILLE WEST NE, ILLINOIS
3.75 MINUTE SERIES
SHEET NUMBER 11 OF 45

Soil map delineations extending beyond the dashed white quadrangle neatline are for reference only and are included on adjacent map sheets.

UNITED STATES
DEPARTMENT OF AGRICULTURE
NATURAL RESOURCES CONSERVATION SERVICE

DE WITT COUNTY, ILLINOIS
WAYNESVILLE EAST NW QUADRANGLE
SHEET NUMBER 12 OF 45



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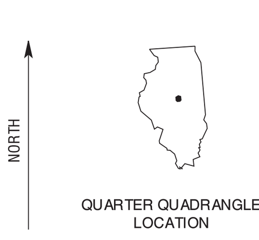
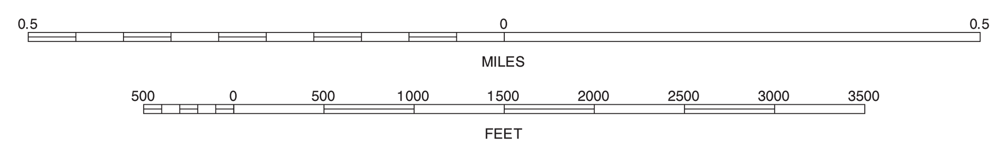


QUARTER QUADRANGLE LOCATION

SCALE 1:12000



1	2	3
11		13
21	22	23

1 MCLEAN SE
2 FUNKS GROVE SW
3 FUNKS GROVE SE
11 WAYNESVILLE WEST NE
13 WAYNESVILLE EAST NE
21 WAYNESVILLE WEST SE
22 WAYNESVILLE EAST SW
23 WAYNESVILLE EAST SE

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WAYNESVILLE EAST NW, ILLINOIS
3.75 MINUTE SERIES
SHEET NUMBER 12 OF 45

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UNITED STATES
DEPARTMENT OF AGRICULTURE
NATURAL RESOURCES CONSERVATION SERVICE

DE WITT COUNTY, ILLINOIS
WAYNESVILLE EAST NE QUADRANGLE
SHEET NUMBER 13 OF 45

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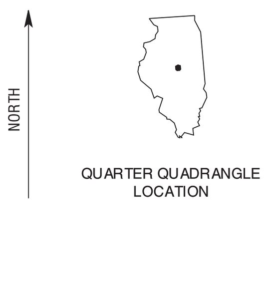
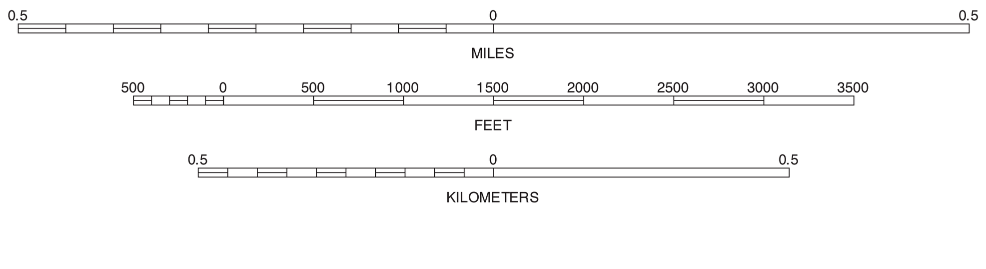
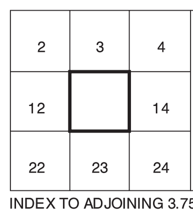


QUARTER QUADRANGLE LOCATION

SCALE 1:12000





2 FUNKS GROVE SW
3 FUNKS GROVE SE
4 HEYWORTH SW
12 WAYNESVILLE EAST NW
14 CLINTON NW
22 WAYNESVILLE EAST SW
23 WAYNESVILLE EAST SE
24 CLINTON SW

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WAYNESVILLE EAST NE, ILLINOIS
3.75 MINUTE SERIES
SHEET NUMBER 13 OF 45

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UNITED STATES
DEPARTMENT OF AGRICULTURE
NATURAL RESOURCES CONSERVATION SERVICE

DE WITT COUNTY, ILLINOIS
CLINTON NW QUADRANGLE
SHEET NUMBER 14 OF 45

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North American Datum of 1983 (NAD83). GRS-80 Spheroid 1000-meter ticks: Universal Transverse Mercator, zone 16. Coordinate grid ticks and land division data, if shown, are approximately positioned. Digital data are available for this quadrangle.

NORTH

QUARTER QUADRANGLE LOCATION

SCALE 1:12000

MILES

FEET

KILOMETERS

3	4	5
13		15
23	24	25

3 FUNKS GROVE SE
4 HEYWORTH SW
5 HEYWORTH SE
13 WAYNESVILLE EAST NE
15 CLINTON NE
23 WAYNESVILLE EAST SE
24 CLINTON SW
25 CLINTON SE

INDEX TO ADJOINING 3.75 MAPS

CLINTON NW, ILLINOIS
3.75 MINUTE SERIES
SHEET NUMBER 14 OF 45

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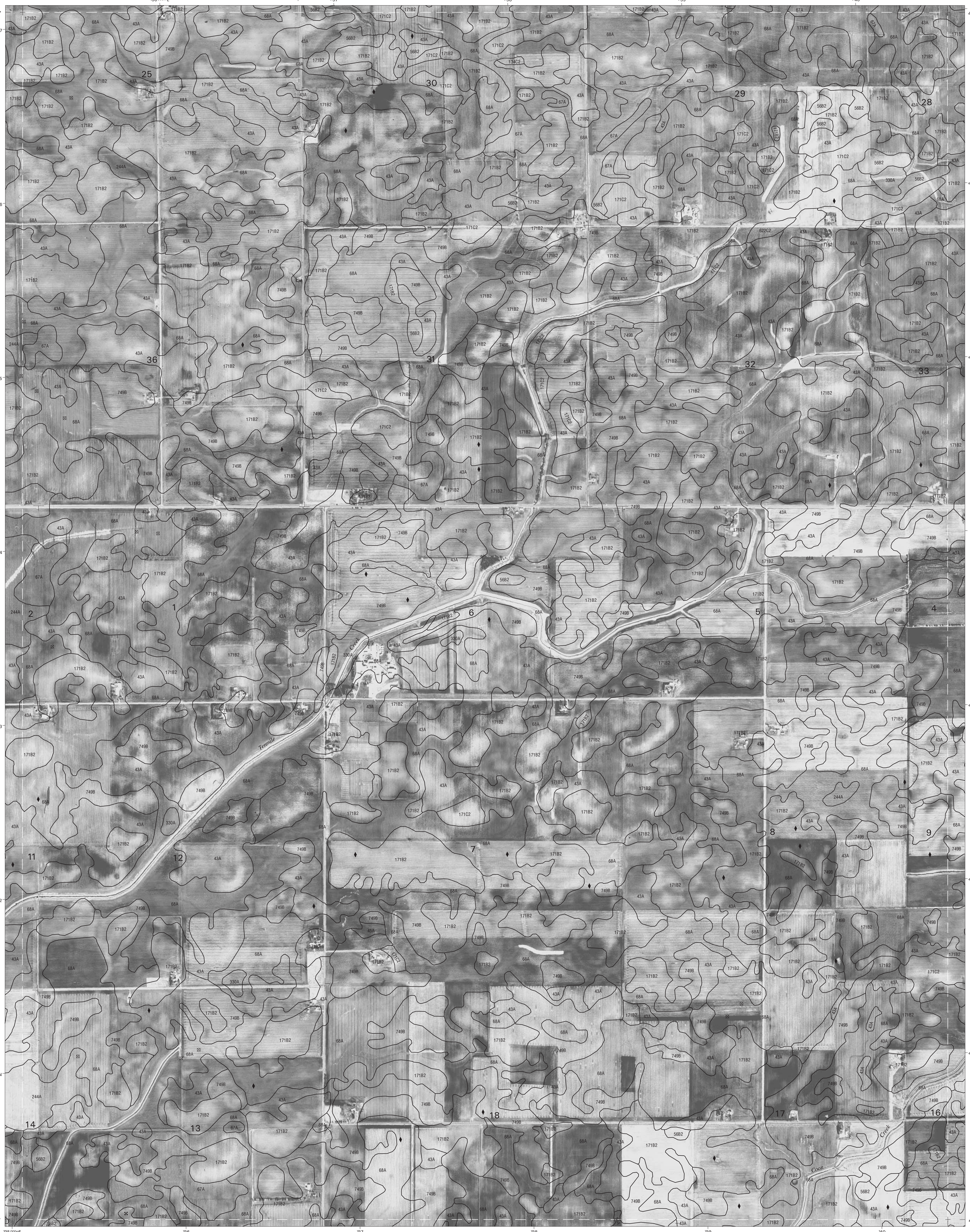
UNITED STATES
DEPARTMENT OF AGRICULTURE
NATURAL RESOURCES CONSERVATION SERVICE

DE WITT COUNTY, ILLINOIS
CLINTON NE QUADRANGLE
SHEET NUMBER 15 OF 45



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NORTH

QUARTER QUADRANGLE LOCATION

SCALE 1:12000

MILES: 0.5 — 0 — 0.5

FEET: 500 — 0 — 500 — 1000 — 1500 — 2000 — 2500 — 3000 — 3500

KILOMETERS: 0.5 — 0 — 0.5

4	5	6
14		16
24	25	26

4 HEYWORTH SW
5 HEYWORTH SE
6 LE ROY SW
14 CLINTON NW
16 DE WITT NW
24 CLINTON SW
25 CLINTON SE
26 DE WITT SW

INDEX TO ADJOINING 3.75 MAPS

CLINTON NE, ILLINOIS
3.75 MINUTE SERIES
SHEET NUMBER 15 OF 45

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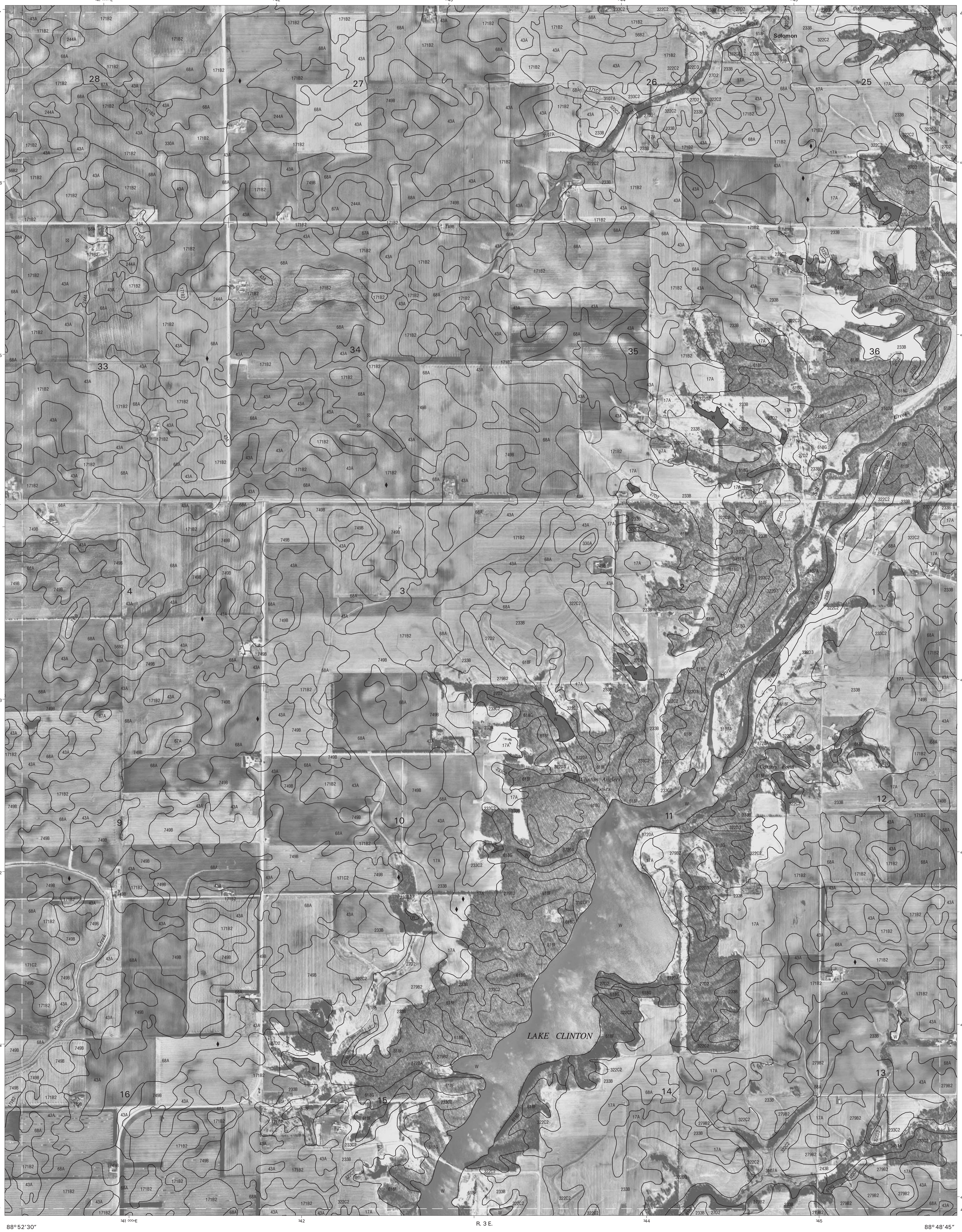
UNITED STATES
DEPARTMENT OF AGRICULTURE
NATURAL RESOURCES CONSERVATION SERVICE

DE WITT COUNTY, ILLINOIS
DE WITT NW QUADRANGLE
SHEET NUMBER 16 OF 45



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NORTH

QUARTER QUADRANGLE LOCATION

SCALE 1:12000

MILES

FEET

KILOMETERS

5	6	7
15		17
25	26	27

5 HEYWORTH SE
6 LE ROY SW
7 LE ROY SE
15 CLINTON NE
17 DE WITT NE
25 CLINTON SE
26 DE WITT SW
27 DE WITT SE

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DE WITT NW, ILLINOIS

3.75 MINUTE SERIES
SHEET NUMBER 16 OF 45

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UNITED STATES
DEPARTMENT OF AGRICULTURE
NATURAL RESOURCES CONSERVATION SERVICE

DE WITT COUNTY, ILLINOIS
DE WITT NE QUADRANGLE
SHEET NUMBER 17 OF 45

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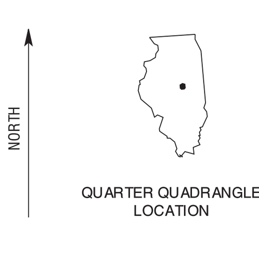

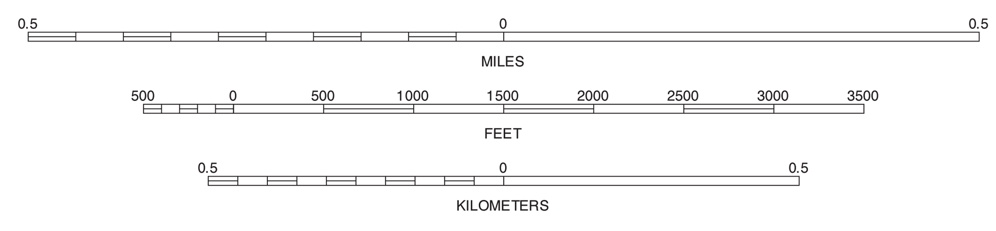

6	7	8
16		18
26	27	28

6 LE ROY SW
7 LE ROY SE
8 FARMER CITY NORTH SW
16 DE WITT NW
18 FARMER CITY SOUTH NW
26 DE WITT SW
27 DE WITT SE
28 FARMER CITY SOUTH SW

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DE WITT NE, ILLINOIS

3.75 MINUTE SERIES
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UNITED STATES
DEPARTMENT OF AGRICULTURE
NATURAL RESOURCES CONSERVATION SERVICE

DE WITT COUNTY, ILLINOIS
FARMER CITY SOUTH NW QUADRANGLE
SHEET NUMBER 18 OF 45

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North American Datum of 1983 (NAD83). GRS-80 Spheroid 1000-meter ticks: Universal Transverse Mercator, zone 16. Coordinate grid ticks and land division data, if shown, are approximately positioned. Digital data are available for this quadrangle.

NORTH

QUARTER QUADRANGLE LOCATION

SCALE 1:12000

0.5 0 0.5
MILES

500 0 500 1000 1500 2000 2500 3000 3500
FEET

0.5 0 0.5
KILOMETERS

7	8	9
17		19
27	28	29

7 LE ROY SE
8 FARMER CITY NORTH SW
9 FARMER CITY NORTH SE
17 DE WITT NE
19 FARMER CITY SOUTH NE
27 DE WITT SE
28 FARMER CITY SOUTH SW
29 FARMER CITY SOUTH SE

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FARMER CITY SOUTH NW, ILLINOIS
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SHEET NUMBER 18 OF 45

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UNITED STATES
DEPARTMENT OF AGRICULTURE
NATURAL RESOURCES CONSERVATION SERVICE

DE WITT COUNTY, ILLINOIS
FARMER CITY SOUTH NE QUADRANGLE
SHEET NUMBER 19 OF 45

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North American Datum of 1983 (NAD83). GRS-80 Spheroid
1000-meter ticks: Universal Transverse Mercator, zone 16.
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NORTH

QUARTER QUADRANGLE
LOCATION

SCALE 1:12000

0.5 0 0.5
MILES

500 0 500 1000 1500 2000 2500 3000 3500
FEET

0.5 0 0.5
KILOMETERS

8	9	10
18		20
28	29	

8 FARMER CITY NORTH SW
9 FARMER CITY NORTH SE
10 BELLFLOWER SW
18 FARMER CITY SOUTH NW
20 MANSFIELD NW
28 FARMER CITY SOUTH SW
29 FARMER CITY SOUTH SE

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FARMER CITY SOUTH NE, ILLINOIS
3.75 MINUTE SERIES
SHEET NUMBER 19 OF 45

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UNITED STATES
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DE WITT COUNTY, ILLINOIS
MANSFIELD NW QUADRANGLE
SHEET NUMBER 20 OF 45

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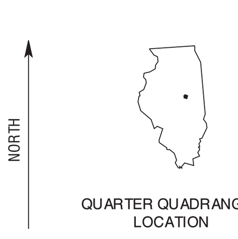
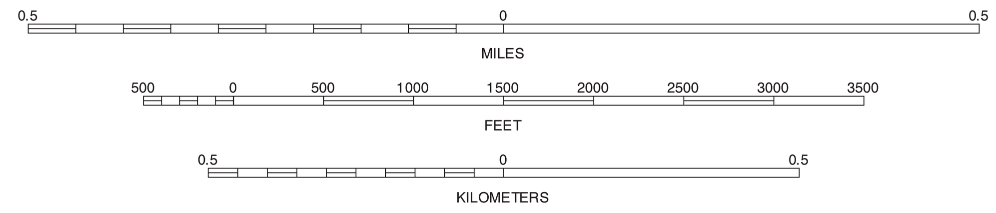
1000-meter ticks: Universal Transverse Mercator, zone 16.
Coordinate grid ticks and land division data, if shown, are approximately positioned. Digital data are available for this quadrangle.



QUARTER QUADRANGLE LOCATION

SCALE 1:12000



9	10	
19		
29		

9 FARMER CITY NORTH SE
10 BELLFLOWER SW
19 FARMER CITY SOUTH NE
29 FARMER CITY SOUTH SE

INDEX TO ADJOINING 3.75 MAPS

MANSFIELD NW, ILLINOIS
3.75 MINUTE SERIES
SHEET NUMBER 20 OF 45

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UNITED STATES
DEPARTMENT OF AGRICULTURE
NATURAL RESOURCES CONSERVATION SERVICE

DE WITT COUNTY, ILLINOIS
WAYNESVILLE WEST SE QUADRANGLE
SHEET NUMBER 21 OF 45

SCALE 1:12000

MILES

FEET

KILOMETERS

NORTH

QUARTER QUADRANGLE LOCATION

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North American Datum of 1983 (NAD83). GRS-80 Spheroid
1000-meter ticks: Universal Transverse Mercator, zone 16.
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11 WAYNESVILLE WEST NE
12 WAYNESVILLE EAST NW
22 WAYNESVILLE EAST SW
30 CHESTNUT NE
31 KENNEY NW

INDEX TO ADJOINING 3.75 MAPS

WAYNESVILLE WEST SE, ILLINOIS
3.75 MINUTE SERIES
SHEET NUMBER 21 OF 45

Soil map delineations extending beyond the dashed white quadrangle neatline are for reference only and are included on adjacent map sheets.

UNITED STATES
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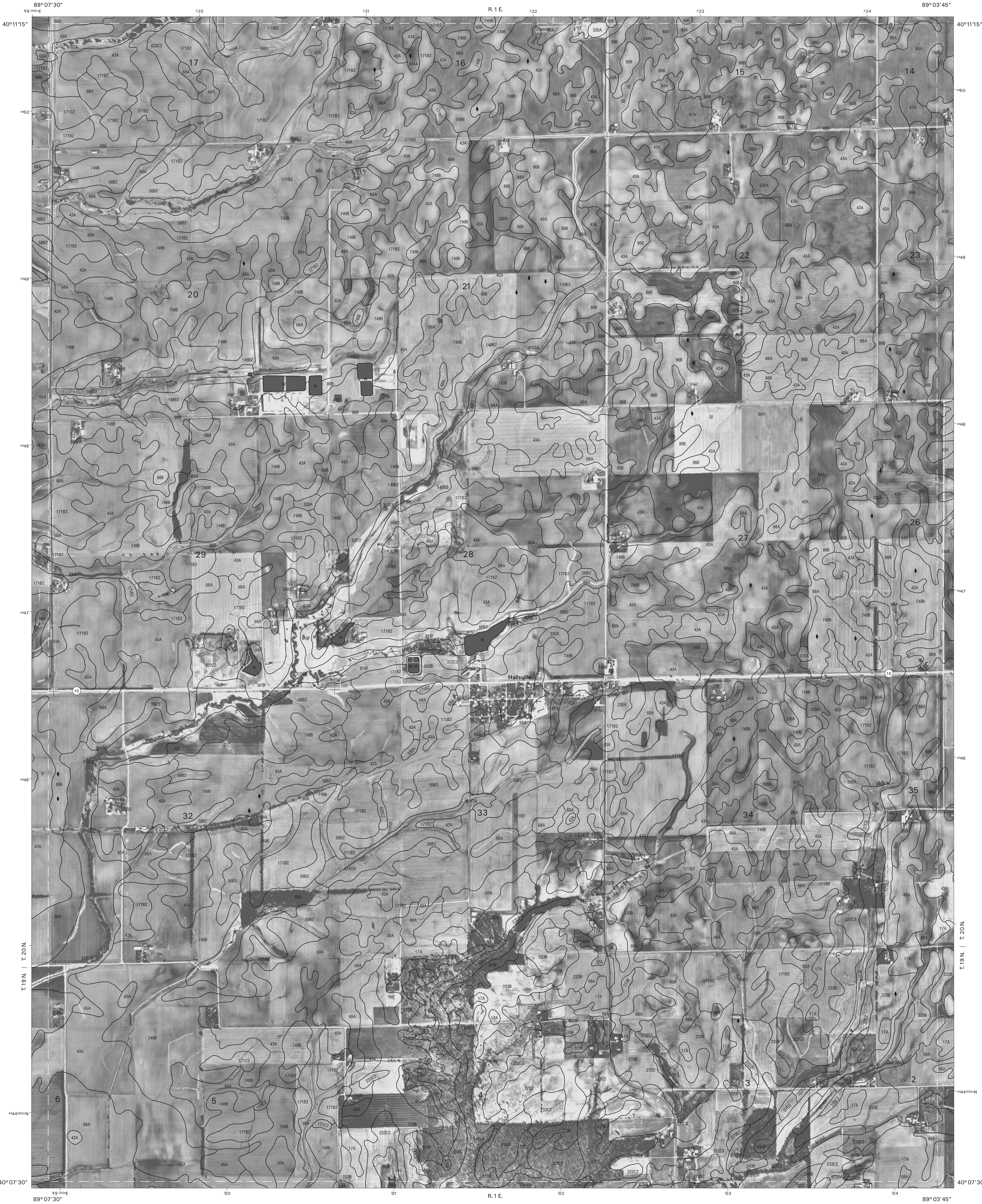
NATURAL RESOURCES CONSERVATION SERVICE

DE WITT COUNTY, ILLINOIS
WAYNESVILLE EAST SW QUADRANGLE
SHEET NUMBER 22 OF 45



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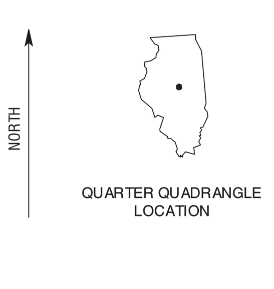

QUARTER QUADRANGLE LOCATION

SCALE 1:12000

0.5 0 0.5
MILES

500 0 500 1000 1500 2000 2500 3000 3500
FEET

0.5 0 0.5
KILOMETERS

11	12	13
21		23
30	31	32

11 WAYNESVILLE WEST NE
12 WAYNESVILLE EAST NW
13 WAYNESVILLE EAST NE
21 WAYNESVILLE WEST SE
23 WAYNESVILLE EAST SE
30 CHESTNUT NE
31 KENNEY NW
32 KENNEY NE

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WAYNESVILLE EAST SW, ILLINOIS
3.75 MINUTE SERIES
SHEET NUMBER 22 OF 45

Soil map delineations extending beyond the dashed white quadrangle neatline are for reference only and are included on adjacent map sheets.

UNITED STATES
DEPARTMENT OF AGRICULTURE
NATURAL RESOURCES CONSERVATION SERVICE

DE WITT COUNTY, ILLINOIS
WAYNESVILLE EAST SE QUADRANGLE
SHEET NUMBER 23 OF 45

This soil survey was compiled by the U.S. Department of Agriculture, Natural Resources Conservation Service and cooperating agencies.
Base maps are orthophotographs prepared by the U.S. Department of Interior, Geological Survey, from 1998 - 1999 aerial photography.

North American Datum of 1983 (NAD83). GRS-80 Spheroid 1000-meter ticks: Universal Transverse Mercator, zone 16. Coordinate grid ticks and land division data, if shown, are approximately positioned. Digital data are available for this quadrangle.

NORTH

QUARTER QUADRANGLE LOCATION

SCALE 1:12000

0.5 0 0.5 MILES

500 0 500 1000 1500 2000 2500 3000 3500 FEET

0.5 0 0.5 KILOMETERS

12	13	14
22		24
31	32	33

12 WAYNESVILLE EAST NW
13 WAYNESVILLE EAST NE
14 CLINTON NW
22 WAYNESVILLE EAST SW
24 CLINTON SW
31 KENNEY NW
32 KENNEY NE
33 MAROA NW

INDEX TO ADJOINING 3.75 MAPS

WAYNESVILLE EAST SE, ILLINOIS
3.75 MINUTE SERIES
SHEET NUMBER 23 OF 45

Soil map delineations extending beyond the dashed white quadrangle neatline are for reference only and are included on adjacent map sheets.

UNITED STATES
DEPARTMENT OF AGRICULTURE
NATURAL RESOURCES CONSERVATION SERVICE

DE WITT COUNTY, ILLINOIS
CLINTON SW QUADRANGLE
SHEET NUMBER 24 OF 45

This soil survey was compiled by the U.S. Department of Agriculture, Natural Resources Conservation Service and cooperating agencies.
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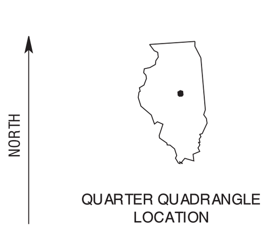
North American Datum of 1983 (NAD83). GRS-80 Spheroid 1000-meter ticks: Universal Transverse Mercator, zone 16. Coordinate grid ticks and land division data, if shown, are approximately positioned. Digital data are available for this quadrangle.



QUARTER QUADRANGLE LOCATION

SCALE 1:12000

MILES 0.5 0 0.5

FEET 500 0 500 1000 1500 2000 2500 3000 3500

KILOMETERS 0.5 0 0.5

13	14	15
23		25
32	33	34

13 WAYNESVILLE EAST NE
14 CLINTON NW
15 CLINTON NE
23 WAYNESVILLE EAST SE
25 CLINTON SE
32 KENNEY NE
33 MAROA NW
34 MAROA NE

INDEX TO ADJOINING 3.75 MAPS

CLINTON SW, ILLINOIS
3.75 MINUTE SERIES
SHEET NUMBER 24 OF 45

Soil map delineations extending beyond the dashed white quadrangle neatline are for reference only and are included on adjacent map sheets.

UNITED STATES
DEPARTMENT OF AGRICULTURE
NATURAL RESOURCES CONSERVATION SERVICE

DE WITT COUNTY, ILLINOIS
CLINTON SE QUADRANGLE
SHEET NUMBER 25 OF 45

88° 56′15″ R. 2 E. | R. 3 E. 88° 52′30″

40° 11′15″

40° 07′30″

88° 56′15″ R. 2 E. | R. 3 E. 88° 52′30″

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NORTH

QUARTER QUADRANGLE LOCATION

SCALE 1:12000

0.5 0 0.5
MILES

500 0 500 1000 1500 2000 2500 3000 3500
FEET

0.5 0 0.5
KILOMETERS

14	15	16
24		26
33	34	35

14 CLINTON NW
15 CLINTON NE
16 DE WITT NW
24 CLINTON SW
26 DE WITT SW
33 MAROA NW
34 MAROA NE
35 WELDON WEST NW

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CLINTON SE, ILLINOIS
3.75 MINUTE SERIES
SHEET NUMBER 25 OF 45

Soil map delineations extending beyond the dashed white quadrangle neatline are for reference only and are included on adjacent map sheets.

UNITED STATES
DEPARTMENT OF AGRICULTURE
NATURAL RESOURCES CONSERVATION SERVICE

DE WITT COUNTY, ILLINOIS
DE WITT SW QUADRANGLE
SHEET NUMBER 26 OF 45

88° 52'30" R. 3 E. 88° 48'45"

40°11'15" 40°11'15"

40° 07'30" 40° 07'30"

88° 52'30" R. 3 E. 88° 48'45"

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North American Datum of 1983 (NAD83). GRS-80 Spheroid
1000-meter ticks: Universal Transverse Mercator, zone 16.
Coordinate grid ticks and land division data, if shown, are approximately positioned. Digital data are available for this quadrangle.

NORTH

QUARTER QUADRANGLE LOCATION

SCALE 1:12000

MILES

FEET

KILOMETERS

15	16	17
25		27
34	35	36

15 CLINTON NE
16 DE WITT NW
17 DE WITT NE
25 CLINTON SE
27 DE WITT SE
34 MAROA NE
35 WELDON WEST NW
36 WELDON WEST NE

INDEX TO ADJOINING 3.75 MAPS

DE WITT SW, ILLINOIS
3.75 MINUTE SERIES
SHEET NUMBER 26 OF 45

Soil map delineations extending beyond the dashed white quadrangle neatline are for reference only and are included on adjacent map sheets.

UNITED STATES
DEPARTMENT OF AGRICULTURE
NATURAL RESOURCES CONSERVATION SERVICE

DE WITT COUNTY, ILLINOIS
DE WITT SE QUADRANGLE
SHEET NUMBER 27 OF 45

This soil survey was compiled by the U.S. Department of Agriculture, Natural Resources Conservation Service and cooperating agencies.
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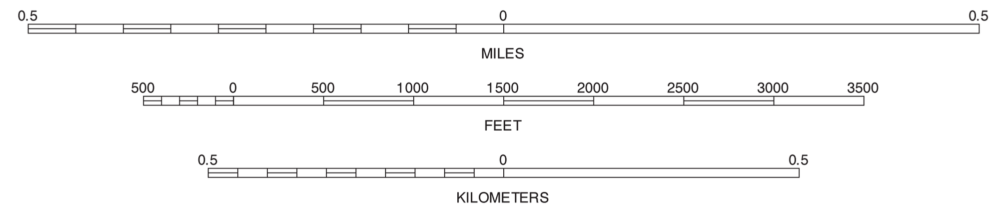
North American Datum of 1983 (NAD83). GRS-80 Spheroid 1000-meter ticks: Universal Transverse Mercator, zone 16. Coordinate grid ticks and land division data, if shown, are approximately positioned. Digital data are available for this quadrangle.

QUARTER QUADRANGLE LOCATION

SCALE 1:12000



16	17	18
26		28
35	36	37

16 DE WITT NW
17 DE WITT NE
18 FARMER CITY SOUTH NW
26 DE WITT SW
28 FARMER CITY SOUTH SW
35 WELDON WEST NW
36 WELDON WEST NE
37 WELDON EAST NW

INDEX TO ADJOINING 3.75 MAPS

DE WITT SE, ILLINOIS

3.75 MINUTE SERIES
SHEET NUMBER 27 OF 45

Soil map delineations extending beyond the dashed white quadrangle neatline are for reference only and are included on adjacent map sheets.

UNITED STATES
DEPARTMENT OF AGRICULTURE
NATURAL RESOURCES CONSERVATION SERVICE

DE WITT COUNTY, ILLINOIS
FARMER CITY SOUTH SW QUADRANGLE
SHEET NUMBER 28 OF 45

This soil survey was compiled by the U.S. Department of Agriculture, Natural Resources Conservation Service and cooperating agencies.
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North American Datum of 1983 (NAD83). GRS-80 Spheroid 1000-meter ticks: Universal Transverse Mercator, zone 16. Coordinate grid ticks and land division data, if shown, are approximately positioned. Digital data are available for this quadrangle.

NORTH

QUARTER QUADRANGLE LOCATION

SCALE 1:12000

0.5 0 0.5
MILES

500 0 500 1000 1500 2000 2500 3000 3500
FEET

0.5 0 0.5
KILOMETERS

17	18	19
27		29
36	37	

17 DE WITT NE
18 FARMER CITY SOUTH NW
19 FARMER CITY SOUTH NE
27 DE WITT SE
29 FARMER CITY SOUTH SE
36 WELDON WEST NE
37 WELDON EAST NW

INDEX TO ADJOINING 3.75 MAPS

FARMER CITY SOUTH SW, ILLINOIS
3.75 MINUTE SERIES
SHEET NUMBER 28 OF 45

Soil map delineations extending beyond the dashed white quadrangle neatline are for reference only and are included on adjacent map sheets.

UNITED STATES
DEPARTMENT OF AGRICULTURE
NATURAL RESOURCES CONSERVATION SERVICE

DE WITT COUNTY, ILLINOIS
FARMER CITY SOUTH SE QUADRANGLE
SHEET NUMBER 29 OF 45

This soil survey was compiled by the U.S. Department of Agriculture, Natural Resources Conservation Service and cooperating agencies.
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North American Datum of 1983 (NAD83). GRS-80 Spheroid 1000-meter ticks: Universal Transverse Mercator, zone 16. Coordinate grid ticks and land division data, if shown, are approximately positioned. Digital data are available for this quadrangle.

NORTH

QUARTER QUADRANGLE LOCATION

SCALE 1:12000

0.5 0 0.5
MILES

500 0 500 1000 1500 2000 2500 3000 3500
FEET

0.5 0 0.5
KILOMETERS

18	19	20
28		
37		

18 FARMER CITY SOUTH NW
19 FARMER CITY SOUTH NE
20 MANSFIELD NW
28 FARMER CITY SOUTH SW
37 WELDON EAST NW

INDEX TO ADJOINING 3.75 MAPS

FARMER CITY SOUTH SE, ILLINOIS
3.75 MINUTE SERIES
SHEET NUMBER 29 OF 45

Soil map delineations extending beyond the dashed white quadrangle neatline are for reference only and are included on adjacent map sheets.

UNITED STATES
DEPARTMENT OF AGRICULTURE
NATURAL RESOURCES CONSERVATION SERVICE

DE WITT COUNTY, ILLINOIS
CHESTNUT NE QUADRANGLE
SHEET NUMBER 30 OF 45

This soil survey was compiled by the U.S. Department of Agriculture, Natural Resources Conservation Service and cooperating agencies.
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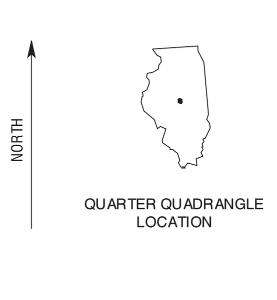
North American Datum of 1983 (NAD83). GRS-80 Spheroid 1000-meter ticks: Universal Transverse Mercator, zone 16. Coordinate grid ticks and land division data, if shown, are approximately positioned. Digital data are available for this quadrangle.



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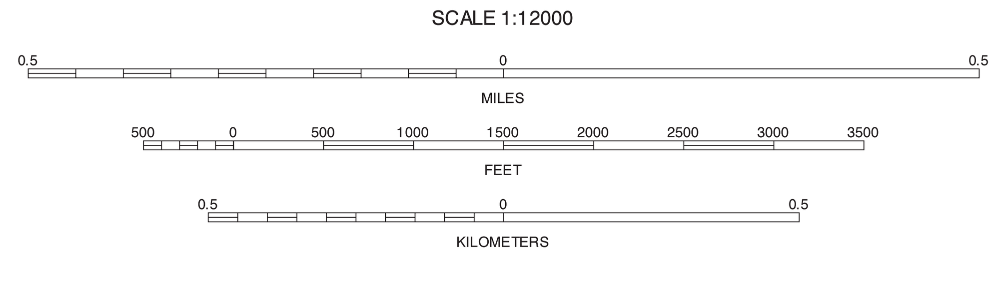

	21	22
		31
	38	39

21 WAYNESVILLE WEST SE
22 WAYNESVILLE EAST SW
31 KENNEY NW
38 CHESTNUT SE
39 KENNEY SW

INDEX TO ADJOINING 3.75 MAPS

CHESTNUT NE, ILLINOIS
3.75 MINUTE SERIES
SHEET NUMBER 30 OF 45

Soil map delineations extending beyond the dashed white quadrangle neatline are for reference only and are included on adjacent map sheets.

UNITED STATES
DEPARTMENT OF AGRICULTURE
NATURAL RESOURCES CONSERVATION SERVICE

DE WITT COUNTY, ILLINOIS
KENNEY NW QUADRANGLE
SHEET NUMBER 31 OF 45

This soil survey was compiled by the U.S. Department of Agriculture, Natural Resources Conservation Service and cooperating agencies.
Base maps are orthophotographs prepared by the U.S. Department of Interior, Geological Survey, from 1998 - 1999 aerial photography.

North American Datum of 1983 (NAD83). GRS-80 Spheroid
1000-meter ticks: Universal Transverse Mercator, zone 16.
Coordinate grid ticks and land division data, if shown, are approximately positioned. Digital data are available for this quadrangle.

NORTH

QUARTER QUADRANGLE LOCATION

SCALE 1:12000

MILES

FEET

KILOMETERS

21	22	23
30		32
38	39	40

21 WAYNESVILLE WEST SE
22 WAYNESVILLE EAST SW
23 WAYNESVILLE EAST SE
30 CHESTNUT NE
32 KENNEY NE
38 CHESTNUT SE
39 KENNEY SW
40 KENNEY SE

INDEX TO ADJOINING 3.75 MAPS

KENNEY NW, ILLINOIS
3.75 MINUTE SERIES
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Soil map delineations extending beyond the dashed white quadrangle neatline are for reference only and are included on adjacent map sheets.

UNITED STATES
DEPARTMENT OF AGRICULTURE
NATURAL RESOURCES CONSERVATION SERVICE

DE WITT COUNTY, ILLINOIS
KENNEY NE QUADRANGLE
SHEET NUMBER 32 OF 45

This soil survey was compiled by the U.S. Department of Agriculture, Natural Resources Conservation Service and cooperating agencies.
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North American Datum of 1983 (NAD83). GRS-80 Spheroid
1000-meter ticks: Universal Transverse Mercator, zone 16.
Coordinate grid ticks and land division data, if shown, are approximately positioned. Digital data are available for this quadrangle.

NORTH

QUARTER QUADRANGLE LOCATION

SCALE 1:12000

MILES

FEET

KILOMETERS

22	23	24
31		33
39	40	41

22 WAYNESVILLE EAST SW
23 WAYNESVILLE EAST SE
24 CLINTON SW
31 KENNEY NW
33 MAROA NW
39 KENNEY SW
40 KENNEY SE
41 MAROA SW

INDEX TO ADJOINING 3.75 MAPS

KENNEY NE, ILLINOIS
3.75 MINUTE SERIES
SHEET NUMBER 32 OF 45

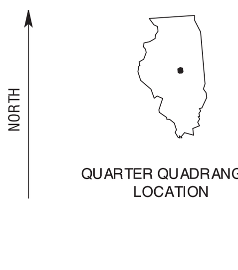
Soil map delineations extending beyond the dashed white quadrangle neatline are for reference only and are included on adjacent map sheets.

UNITED STATES
DEPARTMENT OF AGRICULTURE
NATURAL RESOURCES CONSERVATION SERVICE

DE WITT COUNTY, ILLINOIS
MAROA NW QUADRANGLE
SHEET NUMBER 33 OF 45

This soil survey was compiled by the U.S. Department of Agriculture, Natural Resources Conservation Service and cooperating agencies.
Base maps are orthophotographs prepared by the U.S. Department of Interior, Geological Survey, from 1998 - 1999 aerial photography.

North American Datum of 1983 (NAD83). GRS-80 Spheroid
1000-meter ticks: Universal Transverse Mercator, zone 16.
Coordinate grid ticks and land division data, if shown, are approximately positioned. Digital data are available for this quadrangle.



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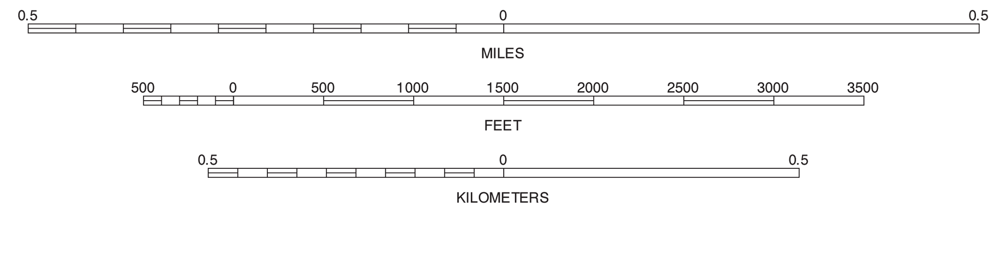

23	24	25
32		34
40	41	42

23 WAYNESVILLE EAST SE
24 CLINTON SW
25 CLINTON SE
32 KENNEY NE
34 MAROA NE
40 KENNEY SE
41 MAROA SW
42 MAROA SE

INDEX TO ADJOINING 3.75 MAPS

MAROA NW, ILLINOIS
3.75 MINUTE SERIES
SHEET NUMBER 33 OF 45

Soil map delineations extending beyond the dashed white quadrangle neatline are for reference only and are included on adjacent map sheets.

UNITED STATES
DEPARTMENT OF AGRICULTURE
NATURAL RESOURCES CONSERVATION SERVICE

DE WITT COUNTY, ILLINOIS
MAROA NE QUADRANGLE
SHEET NUMBER 34 OF 45

This soil survey was compiled by the U.S. Department of Agriculture, Natural Resources Conservation Service and cooperating agencies.
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North American Datum of 1983 (NAD83). GRS-80 Spheroid
1000-meter ticks: Universal Transverse Mercator, zone 16.
Coordinate grid ticks and land division data, if shown, are approximately positioned. Digital data are available for this quadrangle.

NORTH

QUARTER QUADRANGLE LOCATION

SCALE 1:12000

MILES

FEET

KILOMETERS

24	25	26
33		35
41	42	43

24 CLINTON SW
25 CLINTON SE
26 DE WITT SW
33 MAROA NW
35 WELDON WEST NW
41 MAROA SW
42 MAROA SE
43 WELDON WEST SW

INDEX TO ADJOINING 3.75 MAPS

MAROA NE, ILLINOIS
3.75 MINUTE SERIES
SHEET NUMBER 34 OF 45

Soil map delineations extending beyond the dashed white quadrangle neatline are for reference only and are included on adjacent map sheets.

UNITED STATES
DEPARTMENT OF AGRICULTURE
NATURAL RESOURCES CONSERVATION SERVICE

DE WITT COUNTY, ILLINOIS
WELDON WEST NW QUADRANGLE
SHEET NUMBER 35 OF 45

88° 52′30″ R. 3 E. 88° 48′45″

40° 07′30″

40° 03′45″

88° 52′30″ R. 3 E. 88° 48′45″

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NORTH

QUARTER QUADRANGLE LOCATION

SCALE 1:12000

MILES

FEET

KILOMETERS

25	26	27
34		36
42	43	44

25 CLINTON SE
26 DE WITT SW
27 DE WITT SE
34 MAROA NE
36 WELDON WEST NE
42 MAROA SE
43 WELDON WEST SW
44 WELDON WEST SE

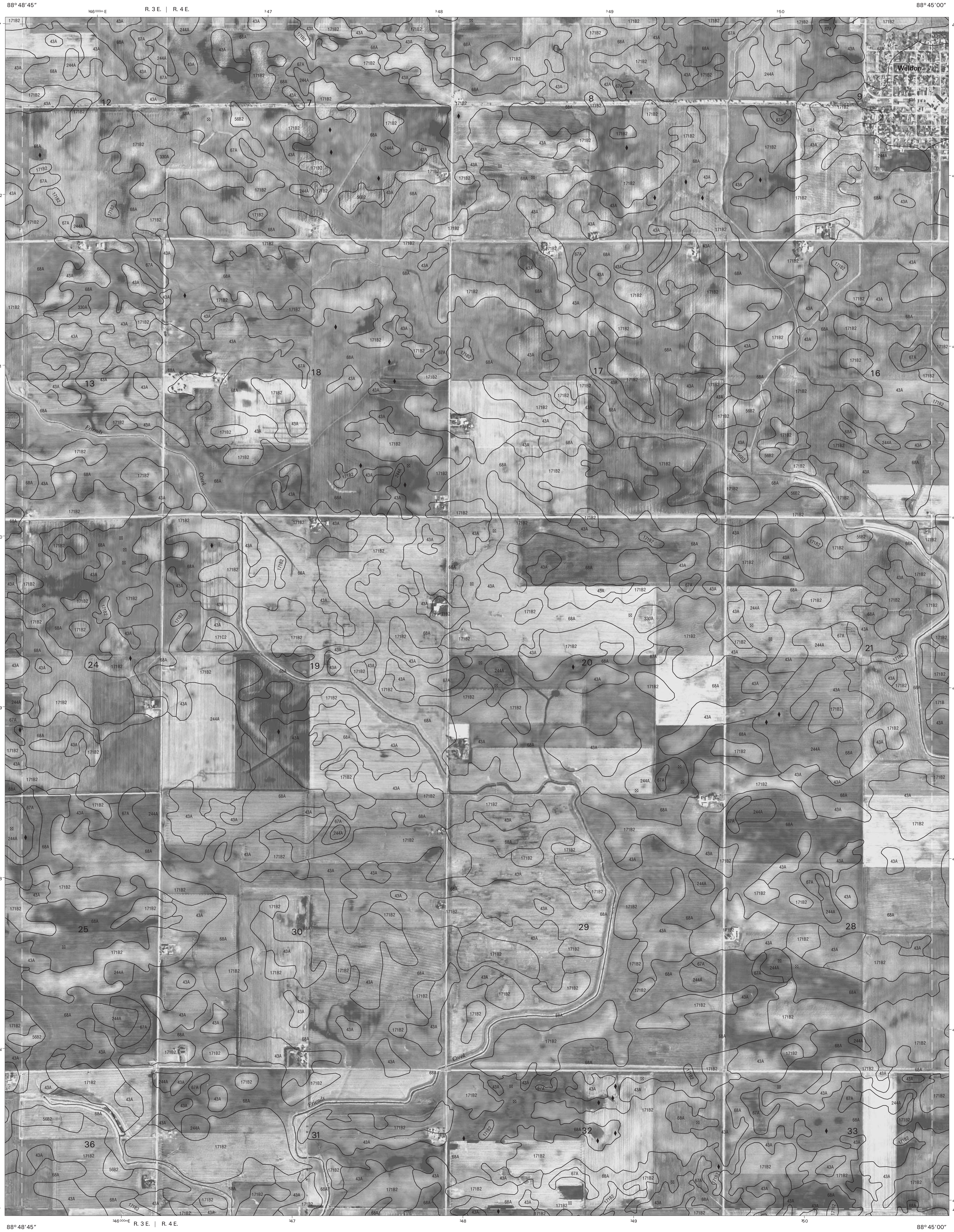
INDEX TO ADJOINING 3.75 MAPS

WELDON WEST NW, ILLINOIS
3.75 MINUTE SERIES
SHEET NUMBER 35 OF 45

Soil map delineations extending beyond the dashed white quadrangle neatline are for reference only and are included on adjacent map sheets.

UNITED STATES
DEPARTMENT OF AGRICULTURE
NATURAL RESOURCES CONSERVATION SERVICE

DE WITT COUNTY, ILLINOIS
WELDON WEST NE QUADRANGLE
SHEET NUMBER 36 OF 45



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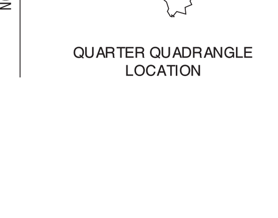

QUARTER QUADRANGLE LOCATION

SCALE 1:12000

0.5 — 0 — 0.5 MILES

500 — 0 — 500 — 1000 — 1500 — 2000 — 2500 — 3000 — 3500 FEET

0.5 — 0 — 0.5 KILOMETERS

26	27	28
35		37
43	44	45

26 DE WITT SW
27 DE WITT SE
28 FARMER CITY SOUTH SW
35 WELDON WEST NW
37 WELDON EAST NW
43 WELDON WEST SW
44 WELDON WEST SE
45 WELDON EAST SW

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WELDON WEST NE, ILLINOIS
3.75 MINUTE SERIES
SHEET NUMBER 36 OF 45

Soil map delineations extending beyond the dashed white quadrangle neatline are for reference only and are included on adjacent map sheets.

UNITED STATES
DEPARTMENT OF AGRICULTURE
NATURAL RESOURCES CONSERVATION SERVICE

DE WITT COUNTY, ILLINOIS
WELDON EAST NW QUADRANGLE
SHEET NUMBER 37 OF 45

This soil survey was compiled by the U.S. Department of Agriculture, Natural Resources Conservation Service and cooperating agencies.
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North American Datum of 1983 (NAD83). GRS-80 Spheroid 1000-meter ticks: Universal Transverse Mercator, zone 16. Coordinate grid ticks and land division data, if shown, are approximately positioned. Digital data are available for this quadrangle.

NORTH

QUARTER QUADRANGLE LOCATION

SCALE 1:12000

MILES 0.5 0 0.5

FEET 500 0 500 1000 1500 2000 2500 3000 3500

KILOMETERS 0.5 0 0.5

27	28	29
36		
44	45	

27 DE WITT SE
28 FARMER CITY SOUTH SW
29 FARMER CITY SOUTH SE
36 WELDON WEST NE
44 WELDON WEST SE
45 WELDON EAST SW

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WELDON EAST NW, ILLINOIS
3.75 MINUTE SERIES
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UNITED STATES
DEPARTMENT OF AGRICULTURE
NATURAL RESOURCES CONSERVATION SERVICE

DE WITT COUNTY, ILLINOIS
CHESTNUT SE QUADRANGLE
SHEET NUMBER 38 OF 45

This soil survey was compiled by the U.S. Department of Agriculture, Natural Resources Conservation Service and cooperating agencies.
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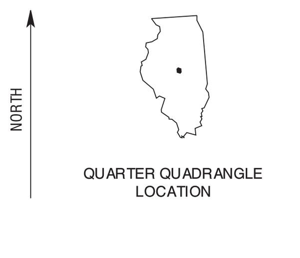
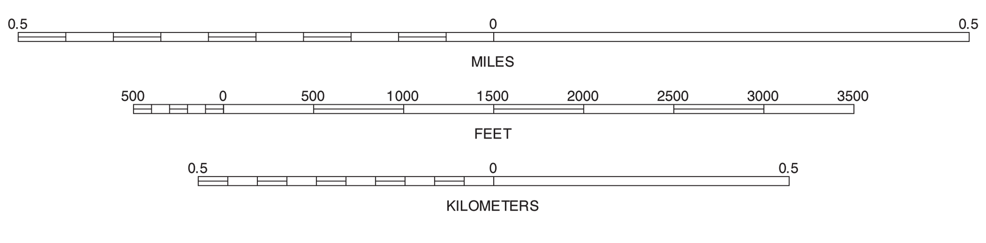
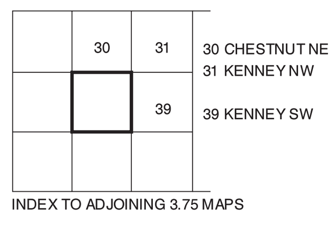
North American Datum of 1983 (NAD83). GRS-80 Spheroid 1000-meter ticks: Universal Transverse Mercator, zone 16. Coordinate grid ticks and land division data, if shown, are approximately positioned. Digital data are available for this quadrangle.







CHESTNUT SE, ILLINOIS
3.75 MINUTE SERIES
SHEET NUMBER 38 OF 45

Soil map delineations extending beyond the dashed white quadrangle neatline are for reference only and are included on adjacent map sheets.

UNITED STATES
DEPARTMENT OF AGRICULTURE
NATURAL RESOURCES CONSERVATION SERVICE

DE WITT COUNTY, ILLINOIS
KENNEY SW QUADRANGLE
SHEET NUMBER 39 OF 45

This soil survey was compiled by the U.S. Department of Agriculture, Natural Resources Conservation Service and cooperating agencies.
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North American Datum of 1983 (NAD83). GRS-80 Spheroid
1000-meter ticks: Universal Transverse Mercator, zone 16.
Coordinate grid ticks and land division data, if shown, are approximately positioned. Digital data are available for this quadrangle.

NORTH

QUARTER QUADRANGLE LOCATION

SCALE 1:12000

MILES

FEET

KILOMETERS

30	31	32
38		40

30 CHESTNUT NE
31 KENNEY NW
32 KENNEY NE
38 CHESTNUT SE
40 KENNEY SE

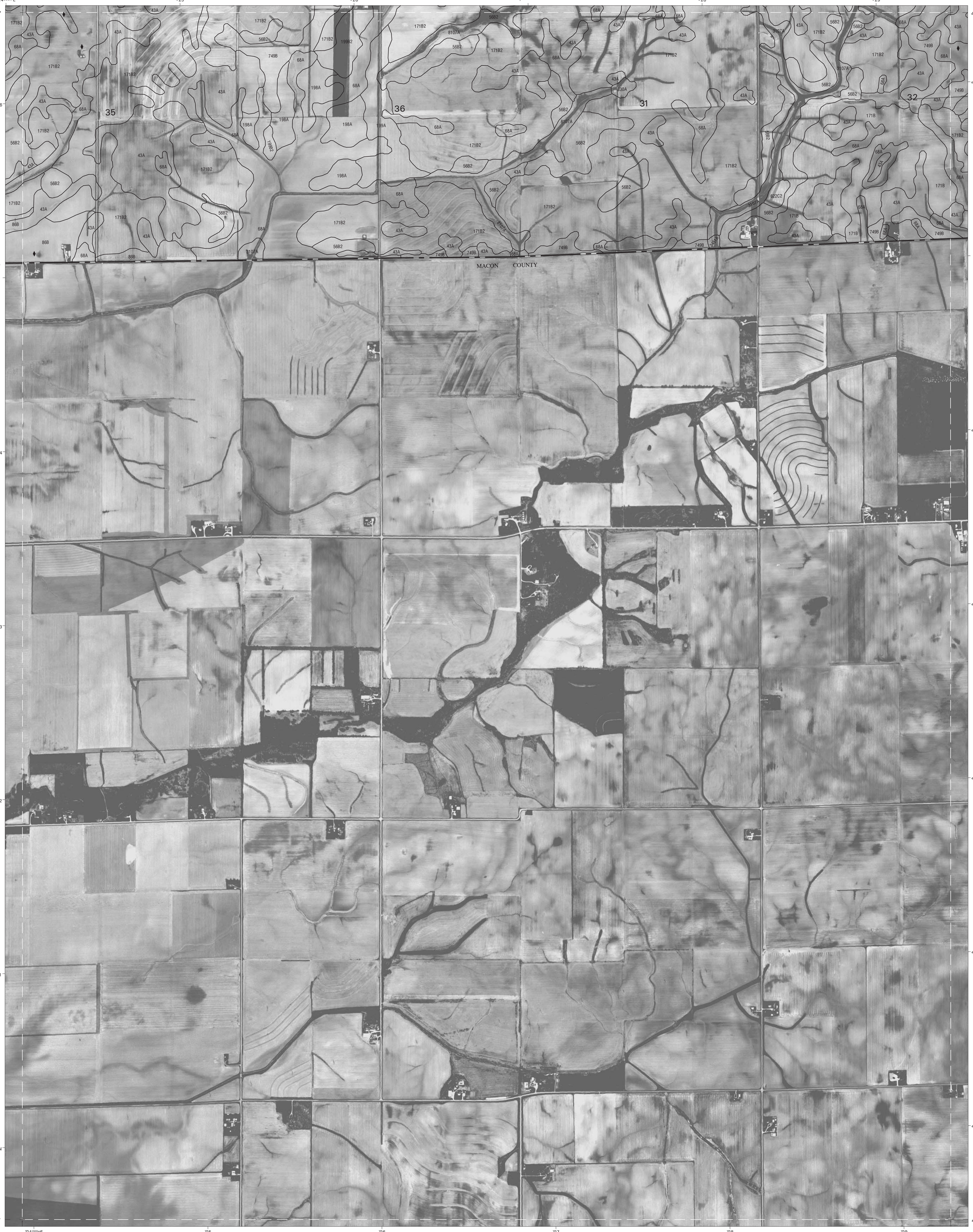
INDEX TO ADJOINING 3.75 MAPS

KENNEY SW, ILLINOIS
3.75 MINUTE SERIES
SHEET NUMBER 39 OF 45

Soil map delineations extending beyond the dashed white quadrangle neatline are for reference only and are included on adjacent map sheets.

UNITED STATES
DEPARTMENT OF AGRICULTURE
NATURAL RESOURCES CONSERVATION SERVICE

DE WITT COUNTY, ILLINOIS
KENNEY SE QUADRANGLE
SHEET NUMBER 40 OF 45



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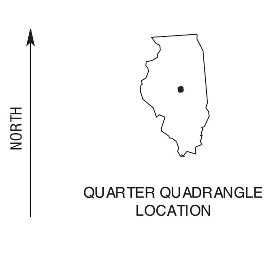
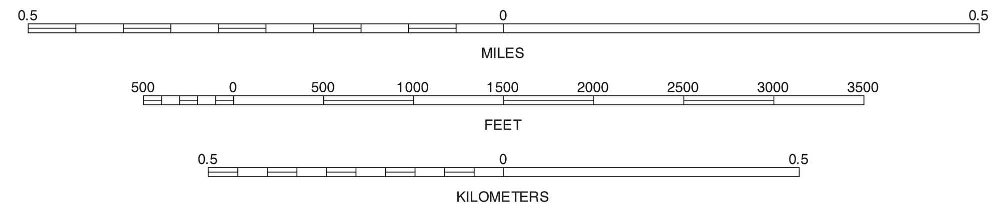
North American Datum of 1983 (NAD83). GRS-80 Spheroid 1000-meter ticks: Universal Transverse Mercator, zone 16. Coordinate grid ticks and land division data, if shown, are approximately positioned. Digital data are available for this quadrangle.



QUARTER QUADRANGLE LOCATION

SCALE 1:12000



31	32	33
39		41

31 KENNEY NW
32 KENNEY NE
33 MAROA NW
39 KENNEY SW
41 MAROA SW

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KENNEY SE, ILLINOIS
3.75 MINUTE SERIES
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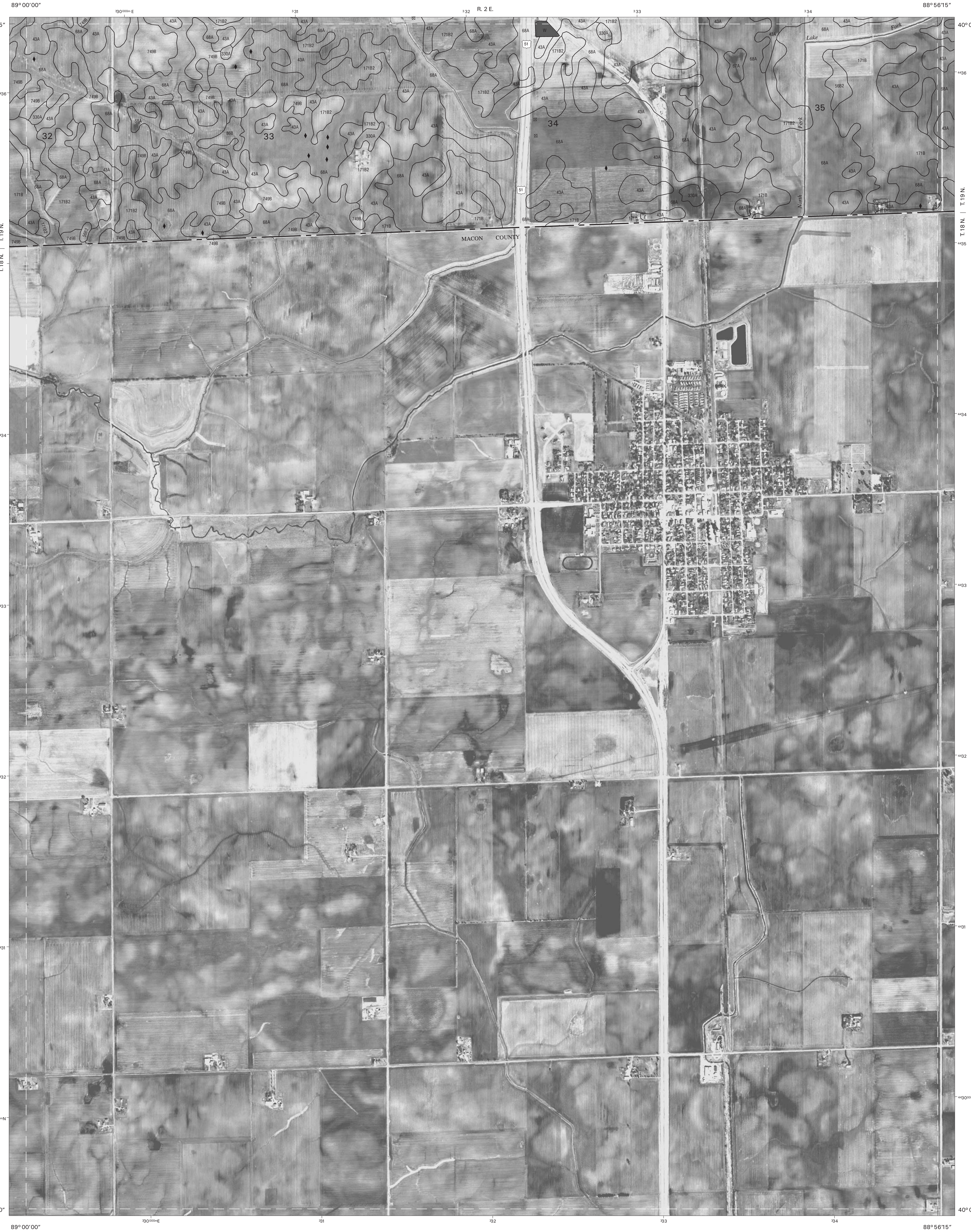
Soil map delineations extending beyond the dashed white quadrangle neatline are for reference only and are included on adjacent map sheets.

UNITED STATES
DEPARTMENT OF AGRICULTURE
NATURAL RESOURCES CONSERVATION SERVICE

DE WITT COUNTY, ILLINOIS
MAROA SW QUADRANGLE
SHEET NUMBER 41 OF 45



This soil survey was compiled by the U.S. Department of Agriculture, Natural Resources Conservation Service and cooperating agencies.
Base maps are orthophotographs prepared by the U.S. Department of Interior, Geological Survey, from 1998 - 1999 aerial photography.

North American Datum of 1983 (NAD83). GRS-80 Spheroid
1000-meter ticks: Universal Transverse Mercator, zone 16.
Coordinate grid ticks and land division data, if shown, are approximately positioned. Digital data are available for this quadrangle.

NORTH

QUARTER QUADRANGLE LOCATION

SCALE 1:12000

0.5 0 0.5
MILES

500 0 500 1000 1500 2000 2500 3000 3500
FEET

0.5 0 0.5
KILOMETERS

32	33	34
40		42

32 KENNEY NE
33 MAROA NW
34 MAROA NE
40 KENNEY SE
42 MAROA SE

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MAROA SW, ILLINOIS
3.75 MINUTE SERIES
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DE WITT COUNTY, ILLINOIS
MAROA SE QUADRANGLE
SHEET NUMBER 42 OF 45

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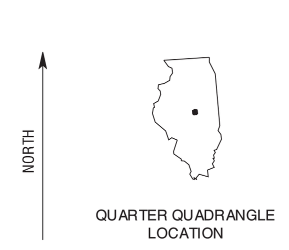

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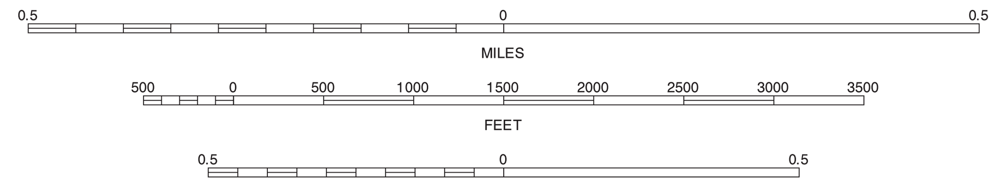

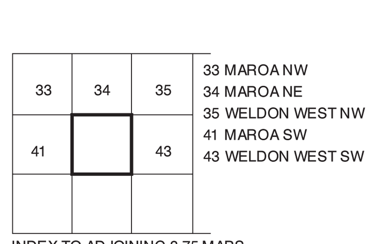

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DE WITT COUNTY, ILLINOIS
WELDON WEST SW QUADRANGLE
SHEET NUMBER 43 OF 45

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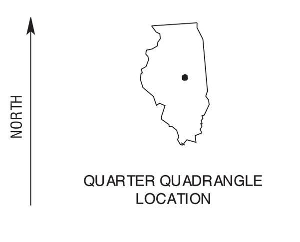

QUARTER QUADRANGLE LOCATION

SCALE 1:12000

0.5 0 0.5
MILES

500 0 500 1000 1500 2000 2500 3000 3500
FEET

0.5 0 0.5
KILOMETERS

34	35	36
42		44

34 MAROA NE
35 WELDON WEST NW
36 WELDON WEST NE
42 MAROA SE
44 WELDON WEST SE

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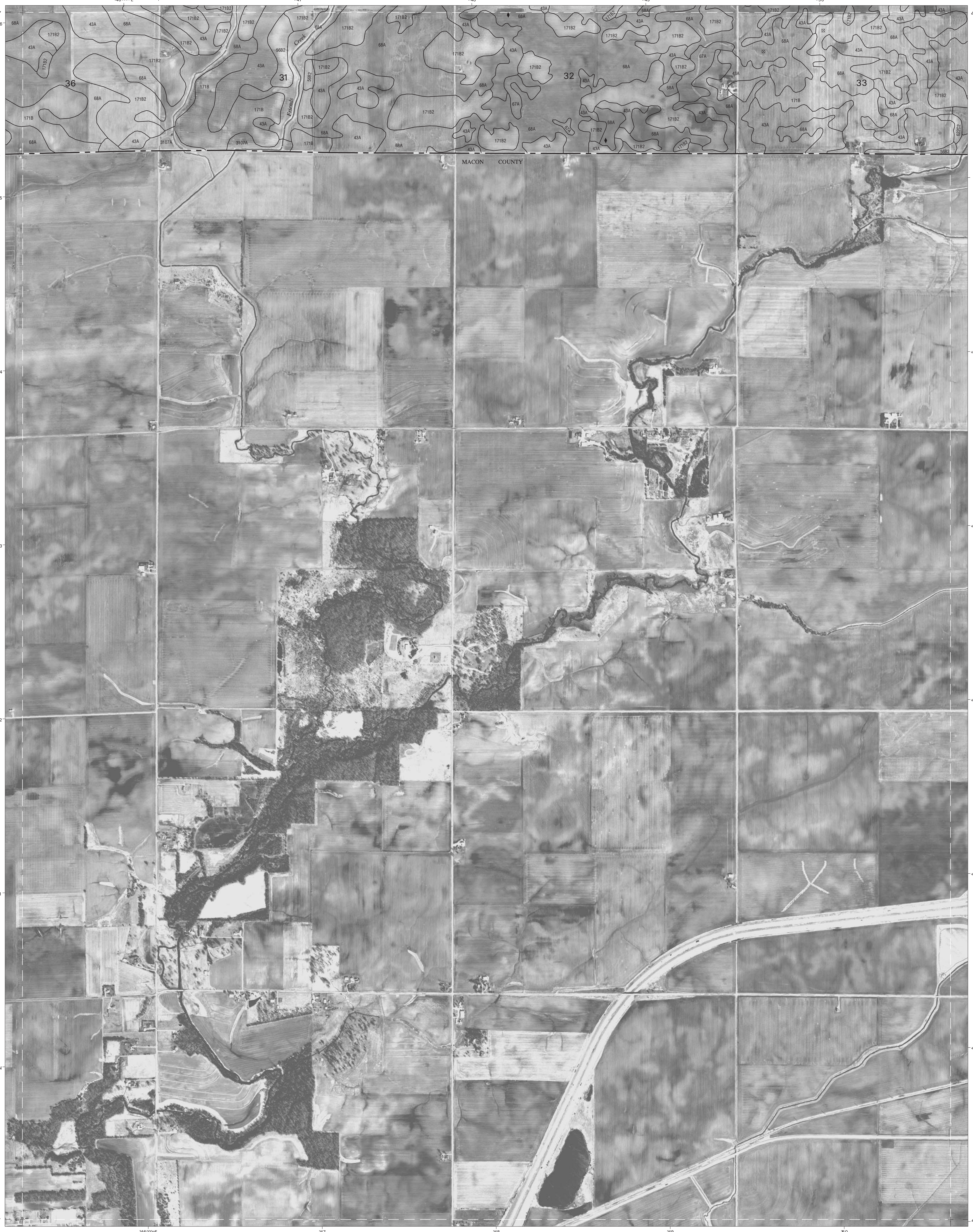
DE WITT COUNTY, ILLINOIS
WELDON WEST SE QUADRANGLE
SHEET NUMBER 44 OF 45

88° 48′45″ — 88° 45′00″
40° 03′45″ — 40° 00′00″



88° 48′45″ | 346000mE | 347 | 348 | 349 | 350 | 88° 45′00″

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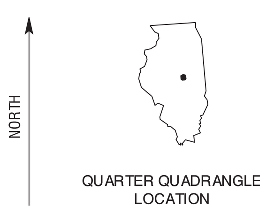
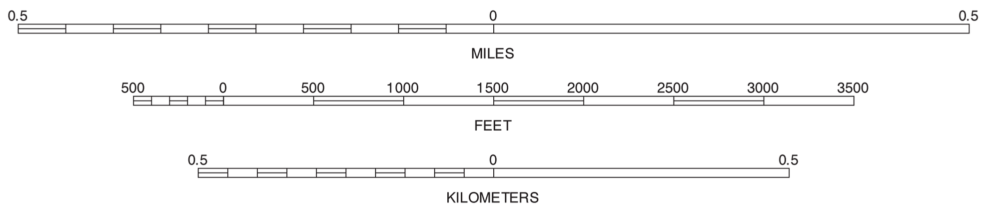
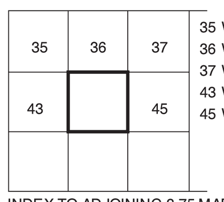


QUARTER QUADRANGLE LOCATION

SCALE 1:12000





35 WELDON WEST NW
36 WELDON WEST NE
37 WELDON EAST NW
43 WELDON WEST SW
45 WELDON EAST SW

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DE WITT COUNTY, ILLINOIS
WELDON EAST SW QUADRANGLE
SHEET NUMBER 45 OF 45

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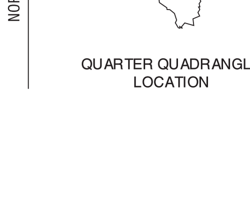


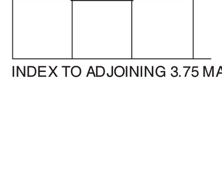
QUARTER QUADRANGLE LOCATION

SCALE 1:12000

0.5 0 0.5
MILES

500 0 500 1000 1500 2000 2500 3000 3500
FEET

0.5 0 0.5
KILOMETERS



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